

# The Boston Medical and Surgical Journal

## TABLE OF CONTENTS

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### ORIGINAL ARTICLES

NON-TUBERCULOUS PYELONEPHRITIS. By Arthur H. Crobie, M.D., Boston.	397
SERULATION OF THE SHOULDER—DOWNWARD. By Frederic J. Cullen, M.D., Boston.	405
MENTAL RESPONSIBILITY AND PETTY CRIME. By D. A. Thom, M.D., Boston.	407
THE SURGICAL TREATMENT OF ULCER AND CANCER OF THE STOMACH. By F. B. Lund, M.D., F.A.C.S., Boston.	413

### CURRENT LITERATURE DEPARTMENT

AN APPARATUS FOR FRACTURES OF THE HUMERUS WHICH ASSURES MOBILITY OF THE ELBOW.	417
ISOPATHIC DILATATION OF THE ESOPHAGUS.	418
JEJUNAL ULCER—POSTOPERATIVE.	418
HABITUAL OR RECURRENT DISLOCATION.	418

### BOOK REVIEWS

Aids to Chemistry. By William Partridge, F.I.C.	418
Injuries of the Peripheral Nerves. By Henry S. Sennitt, U.S.N., F.R.C.N., M.Ch., and Edward W. Twining, M.R.C.S., L.R.C.P.	418

### EDITORIALS

ANTITYPHOID VACCINATION.	419
THE ANNUAL MEETING OF THE NEW ENGLAND SURGICAL SOCIETY.	419
A SUPREME COURT DECISION RELATING TO PHYSICIANS.	420
THE SOCIETY FOR CINEMATOGRAPHIC INSTRUCTION IN MEDICINE AND SURGERY.	422
ANTI-VACCINATION AND THE OSTEOPATHIC SOCIETY.	423
MEDICAL NOTES.	423

### CORRESPONDENCE

NOMINATION OF MEDICAL SOCIETY OFFICERS. Frank E. Bateson.	425
PLACE OF MEETINGS OF THE MASSACHUSETTS MEDICAL SOCIETY. Max Baer, M.D., F.A.C.P.	426
CANCER BY TALBOT. E. A. Codman, M.D.	426

### MISCELLANY

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.	424
SOCIETY NOTICES.	425
NOTICE, ERRATUM, ETC.	426
OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY, ADV. SECT. IV	
STANDING COMMITTEES AND OFFICERS OF THE DISTRICT SOCIETIES. VI	

## Original Articles.

### NON-TUBERCULOUS PYELONEPHRITIS.\*

By ARTHUR H. CROBIE, M.D., BOSTON.

UNDER this heading I will consider the suppurative diseases of the kidney,—pyelitis, pyelonephritis, and pyelonephrosis. Personally, I feel that a simple pyelitis is very rare. Most cases that are called pyelitis are really pyelonephritis, that is, the inflammation is not confined to the lining of the kidney pelvis, but extends up the tubules. Take the so-called pyelitis of children. I feel very sure that this is practically always a pyelonephritis; the same is true of pyelitis of pregnancy.

Pyelonephritis is a much more common disease than most of us realize. I have made no attempt to tabulate its frequency, but I picked up at random, one hundred of my histories that were laid aside to be filed and found that in this hundred cases there were eighteen cases of pyelonephritis.

There are all grades and degrees of pyelonephritis, varying all the way from the person whose only symptom may be slight burning on micturition and only an occasional leucocyte in the urine up to the person who has profound prostration, with chills and fever and much pus and bacteria in the urine.

\* Read before the New Bedford Medical Society, New Bedford, Mass., April 11, 1921.

### WHAT IS PYELONEPHRITIS AND WHAT IS ITS ETIOLOGY?

Pyelonephritis is a diffuse inflammatory process in the kidney due to the invasion of a microorganism. The inflammation affects, as a rule, the lining of the pelvis of the kidney and the kidney tubules extending frequently all the way to the cortex, but rarely affecting the glomeruli. In the severe cases, there are multiple pin-point abscesses, as you may well see in the kidney that I present for inspection and also on the lantern slides. In this specimen you can see that the lining of the pelvis is thickened and there are small abscesses all through the kidney and on the kidney surface. Pyelonephritis, or "infectious nephritis," as Mallory prefers to call it, differs very markedly from acute Bright's disease, both pathologically and clinically. In Bright's disease, the glomeruli are attacked, whereas in pyelonephritis they are spared. This is the reason why the symptoms are so different and the prognosis, as I will show later, is so much better. In Bright's disease, the function of the kidney is much more disturbed, leading to oedema, which is not seen in pyelonephritis, unless the process is very advanced and the destruction of the kidney tissue is great.

In the ordinary case of acute pyelonephritis, there is little or no destruction of kidney tissue, and pyelograms are negative. If, however, there is obstruction to the outflow of urine, either something such as an aberrant vessel or a deformed kidney pelvis that prevents the



ACUTE HEMATOGENOUS KIDNEY SHOWING MULTIPLE ABSCESSES.



INTERIOR VIEW OF ACUTE HEMATOGENOUS KIDNEY SHOWING MULTIPLE ABSCESSES.



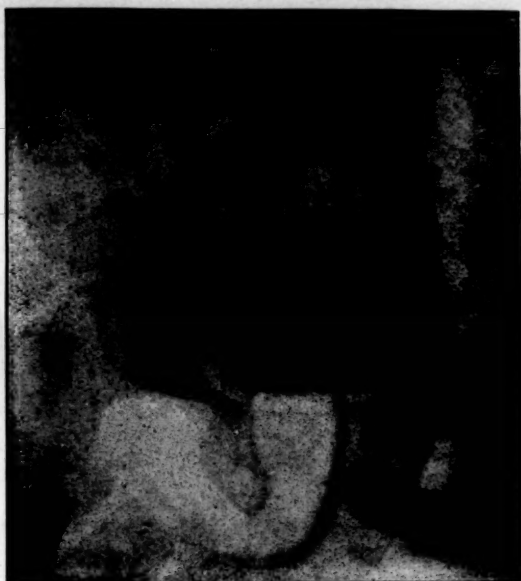
KINK IN URETER CAUSING HYDRONEPHROSIS.

complete emptying of the kidney pelvis or obstruction lower down, preventing the emptying of the bladder, the pyelonephritis will persist in repeated attacks until the pelvis and calyces become dilated and we have the condition known as hydronephrosis and pyonephro-

sis. Continued obstruction of this sort will eventually lead to the entire destruction of the kidney. Theoretically, one would suppose that perinephric abscess would be common in pyelonephritis, especially in a kidney such as the one shown tonight, where there are so many small abscesses on the surface of the kidney. On the contrary, the condition is rare with pyelonephritis. My feeling is that perinephric abscess is due to an infarct near the surface of the kidney and the abscess formed breaks through the cortex of the kidney rather than into the pelvis. This would account for the fact that so often in perinephric abscess the urine has no leucocytes and is sterile.

**Etiology.** Almost all of the pus-producing organisms may cause the disease. The most common one is the colon bacillus. The proteus vulgaris is occasionally found, and this urea-splitting organism can produce a very foul pyelonephritis. There has been much discussion as to how the organisms reach the kidney, but I think that most observers agree that for the most part they are blood borne. That an ascending infection may occur I am sure we must all admit, but I believe this is only possible in case of a much dilated ureter, due to back pressure of residual urine. We not infrequently see such cases as one that I will show on the screen, even in taking cystograms the fluid injected, even if the amount is not large, runs up a ureter and fills the kidney pelvis. In the case I will show on the screen the man had had a tremendously overdistended bladder, due to a stricture, and the left ureter had become greatly dilated. With only 150 c.c. of barium solution in the bladder, the solution filled the left ureter and ran into the kidney pelvis. Now it stands to reason that with an infected urine, such as these cases are apt to have, it would be perfectly possible for the infected bladder urine to bathe the renal pelvis. However, as I said before, it seems to me that the most logical explanation of the source of infection is from the blood stream. I think that many times the infection starts from the lower urinary tract and passes through the blood to the kidney. Take, for example, the chills and fever that one occasionally sees after the passage of sounds. I think here the sound causes a break in the mucous membrane of the urethra and organisms are absorbed into the blood and pass to the kidney, giving an acute pyelonephritis. Of course, the lymph stream is a possible source, but it does not sound plausible to me.

Under the etiology, it might be well to speak of some of the predisposing factors that lead to pyelonephritis. Lowered resistance from overwork, lack of exercise, exposure, neglect of the bowels, etc., are apt to be factors. There is no doubt but colon bacilli and other organisms frequently find their way into the blood stream from the intestine and other places, and



BARIUM SOLUTION PASSING FROM BLADDER OF DILATED LEFT URETER.

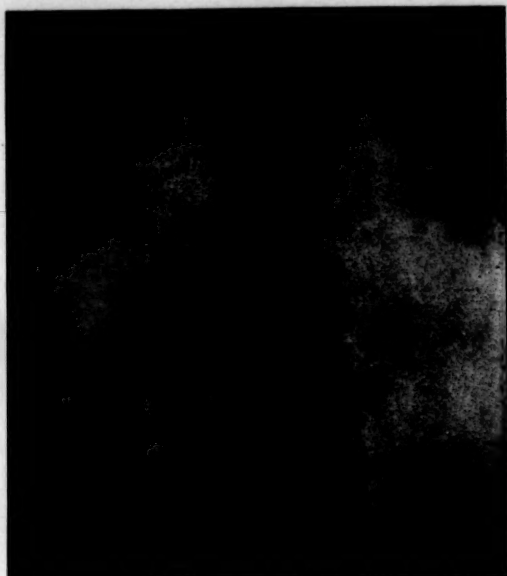
are excreted through the kidneys of healthy people without the formation of lesions. If, however, a person is below par, or if the kidneys themselves are below par, the bacteria may lodge and produce an inflammation. Anything that interferes with the outflow of urine from the kidney, such as kinked ureter causing hydronephrosis, stricture of the ureter, pressure on the ureter, such as you get in pregnancy, stone in the kidney or ureter, obstruction to the outflow of urine from the bladder, causing back pressure of the kidney, renders a kidney very susceptible to infection. This is why pyelonephritis is such a common accompaniment of strictures, obstructing prostates, pregnancy, etc.

The symptoms of pyelonephritis depend entirely upon the severity of the inflammation. The only symptom may be slight burning on micturition. There are all grades, from the person with practically no symptoms up to the one with chills, fever and profound prostration. In a great many cases, the symptoms are entirely referable to the bladder. As a rule, the most prominent symptom is frequency. This may be so severe as to amount to strangury. I am sure that a great many times a diagnosis of cystitis is made without complete investigation, where the trouble is really a pyelonephritis.

A primary cystitis is rare, in fact, I have a feeling that it never exists. I am sure that it always is secondary to a kidney infection or due to urethritis, obstruction of the outflow of urine from the bladder, or stone or new growth in the bladder. Every case of cystitis, especially in women, should be considered as secondary to kidney infection until it is proved to the contrary.

Pain in the kidney is a variable symptom. Even if the inflammation is very extensive, and one or both kidneys considerably enlarged, pain may not be a prominent symptom. If, however, there is much pus and mucus passing down the ureter, the pain may be colicky and very severe, exactly the same pain produced by the passage of a calculus. I feel that sometimes a ureter becomes completely blocked with pus and mucus. This, I think, accounts for the fact that sometimes when the patient is in greatest distress the urine may be clear, with only a few leucocytes present, whereas a few hours later, the patient may be much more comfortable and have a drop in temperature, and yet the urine be full of pus.

Chills are frequent and often are the first sign of trouble. Frequently a person in apparently good health is seized with a severe chill and fever, with no other symptoms, and



BARIUM SOLUTION IN LEFT KIDNEY HAVING PASSED UP URETER FROM BLADDER.

the diagnosis is only made by examination of the urine and the findings of pus and bacteria. Often a person has recurring chills, and the condition is not infrequently mistaken for malaria.

In the mild cases and in the chronic cases, there may be no fever, but in the acute, severe ones the temperature is elevated and is frequently high, the evening temperature sometimes rising as high as  $105^{\circ}$ .

Hematuria is common in the acute stage of the disease. It may amount only to microscopic blood or it may be severe enough to make the urine look like pure blood. As a rule, the hematuria is of short duration. About a year ago, I saw a Catholic priest, forty-eight years of age, who had been in apparently good health, except that he was feeling tired and run down. He had had no urinary trouble. He was waked out of a sound sleep by severe pain in the right side, a chill and a desire to urinate. When he passed his urine, he noticed that it looked like pure blood. When I saw him, next morning, his urine was very bloody and he was having colicky pains in his right side. My thought was renal calculus. He was sent to the hospital, where x-rays were negative. Under forced fluids and alkalis, the blood soon disappeared.

Urethral catheterization, done after the acute attack subsided, showed leucocytes and colon bacilli from both sides, more marked on the right. Pyelograms were negative. He quickly cleared up, and has had no further trouble.

There is always pus in the urine in varying amounts. Casts may or may not be present, and sometimes pus casts are seen, but as a rule, there are few or no casts. The amount of albumin is not so great as in acute Bright's disease, and the urine is not so scanty.

*Examination.* One thing that has often surprised me in cases of acute pyelonephritis is that the patient did not look sicker. I remember, in particular, one girl in the early twenties, with the disease very acute, the right kidney large and slightly tender, with pus in the urine, and evening temperature up to  $105^{\circ}$  for a week, but at no time did she look or feel sick. Her main complaint was that she wanted beefsteak, which was not allowed. I think this is very often the case, that during the early part of an attack the patient does not look so sick as one would expect from the bedside chart. This is often true in the pyelonephritis of children. Frequently there is little to show for the child being sick, except the temperature and the pus in the urine. I have just been observing a woman with pyelonephritis of preg-





KINK IN URETER CAUSING HYDRONEPHROSIS AND PYELOPHRITIS.

nancy, who had an evening temperature of  $103^{\circ}$  to  $104^{\circ}$  each day for two weeks. After the first two or three days, when she had chills and considerable pain, she did not feel sick and did not look sick. It was only with great difficulty that we were able to keep her in bed until her temperature dropped. On the other hand, a patient in which the process has been long continued, such as we get in some cases of pyelonephritis of pregnancy, may look very sick and have marked cachexia. In the severe cases, this continues progressively until the uterus is emptied.

If the amount of fluid taken in has been small, the tongue is apt to be dry and coated. Palpation may reveal some tenderness and spasm over one or both kidneys. Sometimes in even a very acute case, there is none. Both kidneys are usually affected, though one, as a rule, more than the other. There is apt to be a little tenderness as the costovertebral angle, and this is an important place to feel, as it is here we would detect a perinephric abscess.

Examination of the urine always shows pus and the offending organisms. As I have stated before, casts may or may not be present. At some time during pyelonephritis, urethral catheterization should be done and the divided urine examined and cultured, and pyelograms

made. I prefer, as a rule, to wait a few days before passing any instruments into the bladder. The reason for this is that it adds greatly to the patient's discomfort. Most cases respond so readily to treatment that this can safely be done. Occasionally, one is seen who is having so much colic from the passage of pus and mucus that the passage of a catheter with gentle lavage of the kidney pelvis, will give relief. Cystoscopic examination during the acute stage may show a very marked cystitis. Frequently you get the so-called beef-steak bladder. This generally clears up as the process in the kidney subsides.

*Treatment.* In the first place, remember that acute pyelonephritis tends to get well. It is tremendously important to bear this in mind. I feel strongly that a great many so-called acute hematogenous kidneys are removed that would get well if left alone. The process is generally double, though, as I said before, it is usually worse on one side than the other. If one kidney is removed, it leaves an impaired kidney on the other side. I will admit that when one cuts down on one of these acute hematogenous kidneys it looks very bad, covered as it is with small yellow abscesses. Very rarely one may become gangrenous and have to be removed, but my feeling is that it is ex-



NORMAL KIDNEYS AFTER AN ATTACK OF ACUTE PYELONEPHRITIS.

tremely rare. Brewer, in the cases he reported in 1906, must have run into a very severe epidemic, and I am afraid it has influenced some surgeons to be too hasty about removing acute kidneys. I present to you, tonight, a sample of the acute hematogenous kidney that I admit looks pretty bad, with its miliary abscesses all through the kidney substance and over the surface of the kidney. This kidney was removed several years ago by a very prominent Boston surgeon, and I remember that when he saw the kidney cut open, he remarked that it was a good thing we operated early. The operation was done on the second day of the attack. I feel perfectly sure that the patient would have got well and would have a good functioning kidney on her right side today if this kidney had been left in. Of course, not a perfect kidney, for no one can conceive of the resolution of all those abscesses without some destruction of kidney tissue, but a useful kidney, nevertheless.

I wish to present, also, in connection with this kidney, the history and chart of a woman with pyelonephritis of pregnancy. The infection in this woman started first on the left side. She had chills and fever, and the left kidney was enlarged and tender. After a few days the pain, tenderness and swelling disap-

peared from the left side, and then the right kidney started up worse than the left. The patient had frequent chills and pyrexia. There was considerable nausea and vomiting. She was steadily going down hill. She finally reached a point where it was evident that the only thing that could save her was emptying the uterus. As she was a Catholic, an abortion was not permitted. Finally, the spasm and tenderness over the right kidney was so great, that there was a question of there being a perinephric abscess. Hoping that I might find this condition, and give her some relief, I cut down on the right kidney under novocaine, and found no pus outside the kidney, but I did find a kidney that looked exactly like the one I have shown tonight. It was large, and the surface was covered with small yellow spots. It certainly looked like a hopeless kidney. Knowing that the left kidney was infected, a nephrectomy was out of the question, even had I thought it advisable. I merely decapsulated the kidney and closed the wound with drainage. She seemed to get a little relief from the operation, but nothing very marked. She still was failing and continued to do so until she miscarried. As soon as the uterus was emptied, her temperature fell, and her improvement was rapid. Within three weeks the urine, which

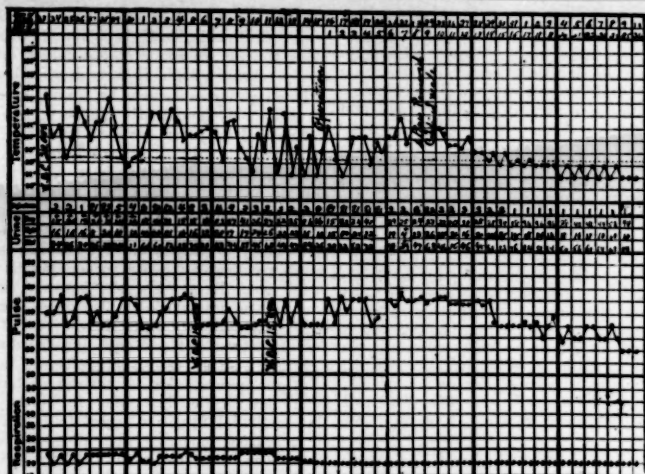


CHART OF PATIENT WITH PYELONEPHRITIS OF PREGNANCY.

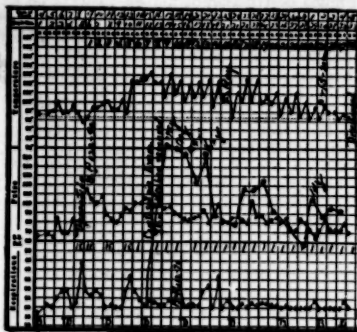


CHART OF PATIENT WITH ACUTE HEMATOGENOUS KIDNEY FOLLOWING OPERATION FOR SUSPENSION.

previously had contained a large amount of pus, had only a rare leucocyte. This is a typical story of the severe pyelonephritis of pregnancy. I am sure that when life is evidently in danger the uterus should be emptied. I followed one case of this sort where an abortion was not permitted, and the woman died. I believe that after the pyelonephritis has once started there is just enough pressure on the ureters to prevent the kidney from entirely clearing up until the pressure is removed. Of course, under proper treatment, many women go through to full term, but I do not believe the pyelonephritis disappears until after the uterus is empty.

I will cite another case and chart that represents the so-called acute hematogenous kidney. A married woman of thirty-four, with no history of previous urinary trouble, was operated on and had a suspension of the uterus and an appendectomy done. Six days after operation, the patient had a chill, pain in the right loin, and fever. I saw her the day after the onset of the attack. She looked sick, her temperature was 103°, and she was having a good deal of pain in the region of the right kidney. Examination showed a much enlarged and tender right kidney. It was so much enlarged that it was evident the moment one looked at the abdomen. As the old saying goes, "it stuck out enough to hang your hat on." As a matter of fact, it did. The urine had been examined and found to contain much pus. There was considerable leucocytosis. When I was sent for, it was supposed that the kidney would have to be removed. If I had operated, I am sure I would have found a kidney similar to the specimen I have shown. I passed ureter catheters and found a free flow of turbid high-colored urine from the right side, and clear urine from the left. It was evident that the kidney tissue was still active. The urine from the right showed many leucocytes, and cultures showed a profuse growth of colon bacilli. The left showed a rare leucocyte and a slight growth of colon bacilli, showing that the process, as it usually is, was double, although much worse on one side. At the time I first saw her, she was passing only about twenty ounces of urine in twenty-four hours. I started her on forced fluids, giving her 1000 c.c. of salt solu-

tion by hypodermoclysis every eight hours, and all the fluid possible by mouth, until the output had been raised to 175 ounces in twenty-four hours. She at once began to show improvement and, as you can see on her chart, the temperature gradually fell to normal and the kidney diminished in size until at the time of her discharge from the hospital, the kidney could hardly be felt.

What I wish to bring out by the foregoing cases is that the treatment of acute pyelonephritis is not operative. As I will bring out later, some cases of chronic pyelonephritis do need operative interference.

The one most important thing in the treatment of acute pyelonephritis is forced fluids. I am never satisfied until the output exceeds one hundred ounces in twenty-four hours. It is well, at first, to get under way, especially in severe cases, with hypodermoclysis. Until the temperature is normal, the patient should be confined to bed and kept on a bland diet. I usually restrict meat at first. The diet does not need to be so strict as in Bright's disease, as the function of the kidney is not so much disturbed. It is important to keep the bowels open. Medication is not so important as forced fluids, but there are some things that help. If the infection is by the colon bacillus, the alkalies are of help. The colon bacillus does not thrive in alkaline urine. Large doses of potassium citrate should be given until the urine becomes alkaline. After the acute stage is passed, hexamethylenamine may be used. If the infection is other than the colon bacillus, hexamethylenamine can be used from the start.

As I mentioned elsewhere, if there is a great deal of renal colic, the passage of a urethral catheter, with gentle lavage of the kidney pelvis, often helps.

After the acute stage has passed, all cases of pyelonephritis should be investigated, ureter catheters should be passed and urine collected for examination from both sides, and pyelograms of both kidneys should be made. The reason for this is to discover whether there has been any destruction of the kidney and to discover if there is any abnormality, such as a kinked ureter, or stone, or tumor, to prevent the process clearing up. Acute pyelonephritis tends to get well. If a case becomes chronic, there is generally some obstructive lesion to account for it. If in investigating a chronic case, any obstruction to the flow of urine is discovered, it should be attended to, as there is danger of complete destruction of the kidney if it is not. An aberrant vessel kinking a ureter is one of the most common causes of pyelonephritis continuing. These usually can be detected by filling the kidney pelvis with 25% sodium bromide or thorium and taking an x-ray with the ureter catheter in. The catheter is then withdrawn three or four inches and another radiograph taken with the patient holding a full

breath. It is well to inject three or four c.c. while the radiograph is being taken. This gives you the excursion of the kidney and generally reveals a kink, if there is one there.

If no abnormality can be found, most cases of chronic pyelonephritis can be improved and some cured by pelvic lavage. For this I formerly used a fairly strong solution of silver nitrate, but recently I have been using mercurochrome 2½%. I have had much better results with the mercurochrome. It is especially good when the condition is really nothing more than a bacilluria. I have a woman in mind who had an acute pyelonephritis eleven years ago. Ever since, she has had frequent and painful micturition. The urine from each kidney showed only a rare leucocyte, but a profuse growth of colon bacilli. Pyelograms were negative. After two treatments, at intervals of three weeks, she is entirely relieved of symptoms for the first time in eleven years. The method I use is to inject four or five c.c. of mercurochrome and then plug the catheter for five minutes, and then withdraw the catheter, leaving as much in the kidney pelvis as possible. In the chronic cases where there is not much destruction of kidney tissue, I do not hesitate to wash out both kidneys at the same time. If there is much destruction, it is better to do so one at a time.

Occasionally, one sees a case of pyelonephritis where there is no apparent obstruction to the outflow of urine where one or both kidneys have been badly damaged. I present here the pyelograms of such a case. On the right side there is a nephroptosis with marked kinking of the right ureter and much destruction of kidney tissue. On the left, however, there is no apparent obstruction to the outflow of urine and yet, as you can see, there is marked blunting of the calyces and dilatation of the kidney pelvis. The urine from both kidneys contains much pus and many colon bacilli. I have already operated on the right kidney, freeing up the kinked ureter, stitching the kidney back in place, and doing a nephrostomy, leaving a tube through the kidney to the kidney pelvis. Nephrostomy, with drainage of the kidney for a week or ten days, often helps a great deal to lessen the inflammation. Of course, the actual destruction that has taken place can never be repaired.

To summarize briefly:

1. Treat acute pyelonephritis expectantly.
2. Force fluids to the utmost.
3. Do not operate until you are sure of the necessity.
4. All cases of pyelonephritis should be thoroughly investigated after the acute symptoms have subsided.

# SUBLUXATION OF THE SHOULDER-- DOWNWARD.

By FREDERIC J. COTTON, M.D., BOSTON.

THE theme of this note is a lesion I find common but apparently unwritten,—the subluxation downward in cases of injury not from a single trauma, but from the weight of the arm made possible through gradual exhaustion of the muscles—primarily of the deltoid muscle.

I have watched this thing for years, occurring in case after case as a complication of shoulder and arm injuries, clearing up promptly if treated early; neglected, it becomes a troublesome complication.

Many, evidently, of the cases ordinarily listed as circumflex paralysis belong in this group.

It was my friend, Dr. J. W. Courtney, who cleared up a puzzling detail for me some years ago, by demonstrating that altered electrical reactions, even a definite "reaction of degeneration," did not prove nerve origin of muscle paralysis and were in no sense a contradiction of direct mechanical action—of stretching of the muscle—as the origin of these paralyses, with the consequent displacement of the head of the bone downward.

The type case is of an uncomplicated fracture of the humerus in which the weight of the heavy and, perhaps, swollen arm, suspended—as in the routine treatment—by the wrist only, brings about a tiring-out of the supporting muscles and the gradual appearance of such a subluxation as is shown in Figure 1. In this case there was no damage at or near the shoulder, but an arm is greatly swollen, in a woman rather elderly and obese.

Figure 2 shows the same arm, same date, but skiagraphed with the patient on her back. This patient recovered entirely, but after repair of the fracture, restoration of shoulder function took some time.

Figure 3 shows a like displacement with a damaged anatomical neck,—this picture taken with the patient erect contrasts with Figure 4, again a picture in the supine position, with the subluxation automatically restored, once the influence of gravity ceases to act.

A like case, of greater displacement, a stouter, older woman, with a heavy arm, is shown in Figure 5. This case also recovered full function with proper care.

In Figure 6, a case first seen in consultation long after injury, it was the loss of power, not the curious deformity, that gave trouble. Here, too, proper support and exercises gave return of this power and incidentally a function surprisingly good, considering the rooco shape of the upper end of the humerus.

These cases date back five to seven years, when this article was first projected, and I find data on five other cases since then, in which this lesion similarly produced, was the main



FIG. 1.—Subluxation of shoulder downward, from gravity, in a case of shaft fracture.



FIG. 2. Same case, self-reduced, in supine position, with the pull of gravity removed.

factor in disability. All nine cases were seen in private practice. At the hospital—less fully followed through—there were many more similar cases.

Now the facts seem to be that if we have an injured arm treated with traction by the weight of the arm or treated by any method that does less than carry the full weight of the arm, then, if the muscles are not strong (eight of these nine cases were in women—



FIG. 2.—Same subluxation in fracture of the surgical neck.



FIG. 4.—Same case, self reduced, in supine position.

nearly all 40 to 70 years old) and if the arm is a heavy one, we may and often do get a stretching paralysis of the deltoid and supraspinatus muscles that lets the head drop down. This is readily overlooked, but readily verified by finding a groove below the acromion to the outer side, often visible, always easily felt.

If nothing is done, the condition passes on to one of helplessness and stiffness, at first glance not unlike that of subdeltoid bursitis, particularly like the form complicated with supraspinatus rupture.

Treatment, after recognition of the fact, con-



FIG. 5.—Same subluxation with high surgical neck fracture. An older patient, heavier arm, more displacement.



FIG. 6.—Marked subluxation with shoulder fracture two months after injury. See text for remarks on this.

sists of early massage, and, just as soon as the main damage makes it practicable, exchange of traction for support, and effective support, of the whole arm. Unless too long a time has elapsed, such support with massage, gives a prompt result—relatively.

The most recent patient broke her humerus April 19, 1921, was of necessity in traction until June 1, having cautious massage from May 10 on. Traction was abandoned June 1, and with support and massage and exercises, she now (June 27, 1921) has a solid arm and pretty nearly normal shoulder function. This



patient, though stout, is vigorous and only 33 years old.

Older, less vigorous people need much longer, but I have yet to see a case properly recognized and treated that had permanent disability.

These cases for a considerable time show not a trace of deltoid power, and several early cases showed definite electrical changes.

Deltoid paralysis assumed to be from circumflex damage, I do not see; all the cases seem to be either brachial plexus lesions\* or the sort of thing here described.

\* For example, photos of a case, recently sent by a friend, of "isolated circumflex nerve lesion" from a fall on the shoulder, showed very marked atrophy of the scapular muscles as well as the deltoid obviously a partial traction lesion of the plexus, not a circumflex contusion.

## MENTAL RESPONSIBILITY AND PETTY CRIME.\*

By D. A. THOM, M.D., BOSTON.

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DURING the past few years a great interest has been manifested in the mental makeup of the criminal, and to a large extent he has been relieved from the burden of responsibility on the grounds of mental deficiency and insanity. Notwithstanding the fact that a great justice has been dealt to a large group of these mentally unstable individuals who have, by virtue of their limited or perverted mental activities, fallen into the hands of the law, there has arisen a certain amount of confusion which clouds the issue between mental deficiency and crime. It has, however, prevented a more intensive study of the personality of the so-called criminal, thus limiting our knowledge of the individual to his capacity for carrying out certain prescribed tests, which, at the best, are only an imperfect method of attaining a measurement of one aspect of mental life, namely, intelligence.

Dr. Walter E. Fernald, in his "After Care Study of the Patients Discharged from Waverley for a Period of Twenty-five Years," has given us some very valuable information regarding the criminalistic tendencies of a rather large group of mentally defective individuals who have come under his observation. The conservation of Dr. Fernald and his belief in segregation, is shown by the fact that during the twenty-five year period, only 1537 inmates were discharged, and of this number 612 were sent directly to institutions for the insane, feeble-minded or epileptic, or were deported to other states. Of the remaining number, histories were obtainable in 646 cases, 470 males and 176 females. The summing up of the male cases is as follows:

Earning a living without supervision	28
Working for wages, supervised at home	28
Working at home, no wages	77
Living at home, not able to work	59
Arrested but not sentenced	23
Sentenced to penal institutions	32
Committed to other institutions	43
Re-admitted to Waverley	68
Died	54
<b>TOTAL</b>	<b>470</b>

I think the important point regarding the criminal defective is that we must not satisfy ourselves by determining only his mental age and intelligence quotient, but make an effort to determine what other factor, or factors, in the personality of this individual of limited intellect there are that make for his criminal tendencies, and to consider at least whether or not this same individual, with normal intellect, might not still have been criminally inclined.

The mentally defective may, it is true, be lacking in the normal inhibitions to a certain degree, yet be sufficiently endowed with the necessary restraint to permit him to adapt himself to society in the proper environment. But impose upon this same individual the burden of a bad environment and he is wrecked upon one of its many shoals, just as many others of a higher intellect are wrecked, only with the defective it occurs a little earlier.

We can now turn our attention to the criminal and perhaps get a clearer and more comprehensive idea of his personality makeup than the simple statement regarding his mental age permits us. Most of the information gathered to date regarding the mental responsibility of the criminal has been interpreted in terms of the psychometric tests rather than in terms of the effort on the part of the individual to adapt himself to society. A large part of the material has been selected from courts and institutions which have to do with adults, the group to which psychometric tests are least adaptable. Thus we find in the following table the percentage of defectives in institutions range from 28% to 82% right here in Massachusetts. If these same figures were presented as representing the positive Wassermanns, for instance, I am sure that some one would question technique on the basis of the discrepancies. The following is a list published by Goddard:

INSTITUTION	PER CENT. DEFECTIVE
St. Cloud, Minnesota, Reformatory	54
Halway Reformatory, N. J. (Binet)*	46
Bedford Reformatory, New York—under 11 years	80
Lancaster, Mass. (girls' reformatory)	82
Lyman School for Boys, Westboro, Mass.	28
Pentonville, Illinois, Juveniles	40
Massachusetts Reformatory, Concord	52
Newark, New Jersey, Juvenile Court	66
Elmira Reformatory	70
Geneva, Illinois (Binet)	70
Ohio Boys' School (Binet)	80
Ohio Girls' School (Binet)	70

\* Read in abstract before New England Society of Psychiatry.

Virginia, 3 Reformatories (Binet) ..... 70  
 New Jersey State Home for Girls ..... 75  
 Glen Mills School, Pa., Girls' Dept. about 72

\*Twisted by Binet scale.

Important and interesting as the above figures may be, they neglect other aspects of the human mind than intelligence, such as the volitional and the emotional. Bernard Gluck, in a study of the criminals at the Sing Sing Prison, New York, presented in a most graphic way the "Etiological Factors of Maladjustment" and their relation to different epochs in the individual's life. He states, "The truth is, that rarely is it possible to hold a single etiologic factor responsible for a criminal act. On the contrary, in the vast majority of instances, a criminal act must be attributed to a number of antecedent inter-related causative factors, each one contributing its share toward the ultimate result, which is expressed in an anti-social act."

Gluck represents graphically various etiologic factors which account for maladjustment in their relation to the various epochs in the individual's life. For example, during his first five years of life, birth injuries, malnutrition, and hereditary factors, such as alcohol, syphilis, and neurotic tendencies, from parents are most likely to become manifest. Between the ages of five and ten, he considers bad home and school training, chorea, mental defects, maldevelopment, etc., likely to become evident. Later on in life, between fifteen and twenty-five, syphilis, sex excesses, deleterious occupations, hysteria phenomena, dementia praecox, and manic depressive insanity are conditions to be considered. Later in life, between thirty and forty, he suggests that unfortunate sex or marital relations, syphilitic and alcoholic psychoses, severe disappointments, and a lack of a satisfactory place in life, with paranoid trends are commonly seen. Between forty and sixty, he terms the period of renunciation, and here we may expect to find many of the phenomena which are associated with this period of life. From sixty on, the devolutional changes, states of depression, arteriosclerosis, dependency, etc., are commonly seen and, as previously stated, it is usually a combination of two or more of these factors that initiate the maladjustment which brings the individual into conflict with society.

In a recent study of a group of men numbering 133, confined at the House of Correction at Deer Island, I was impressed with what appeared to me to be the normal intelligence of the vast majority of the men whom I examined. It is true that psychometric tests were not applied to any of the cases, but taking into consideration their family histories, evidence of physical stigmata, developmental history, economic efficiency, school record and intellectual achievements as judged by their knowledge of the current events of the day and retention of

school knowledge, I found only 13 per cent. whom I was satisfied would fall below the standard of the average individual's intellectual capacity. The remaining 87 per cent., to my mind, were individuals quite capable of determining the rightness or wrongness of their acts, who, largely by virtue of their early environment, developed character traits that became woven in the fabric of their personality in such a way and at such a time that it became tortuous and twisted, and ill adapted to meet the demands of any environment that was not either criminalistic or psychopathic. Envy, jealousy, suspicion, hatred, pride (pseudo), self-consciousness, egotism, feelings of inferiority, and even ambition, may all lead to mental conflicts of which anti-social acts are the result. But it is important to remember that between the fundamental character twist and the anti-social act there may be what appears only an indirect relation, or none at all. Yet, in other cases, the idea or state of mind and act are so closely related that the relation between the cause and effect cannot be doubted.

In seventeen drug cases seen at Deer Island, that fell in this category in the medical diagnosis, thirteen were sentenced for larceny. The object of larceny, in every case, was to procure money to buy drugs. The drug habit, in practically all the cases, was started before twenty. An inquiry regarding the cause of taking the drugs usually revealed it was part of the sport of the gang. In one case, curiosity was the motive for the first "pipe" in a lad who never associated with the gang. In another case, morphine was used to check convulsions, and still another, to allay pain. Regardless of how imperfectly these statements fit the actual situation, one fact remains, that these seventeen men had entered upon a criminal career through a door which might well have been closed, and that there is as little use to sentence these men to three or six months in a house of correction as it would to sentence a case of diphtheria to ten days in a hospital. The criterion for release should be cure. The same is true of thirty-one chronic alcoholics, twenty-one of which have served more than three sentences, and some of them from twelve to twenty. These two shoals, alcohol and drugs, upon which 36 per cent. of the population were wrecked, are obviously environmental problems which are subject to a certain amount of modification. And it is not sufficient to accept the fatalistic view on the feeble-minded problem without making an effort to determine the environmental factors which tend toward production of crime, even in the absence of mental defect.

In considering this large group, where one is strongly inclined to believe that there is no marked defect in the intelligence of the individual and that there does exist sufficient intellect, judgment and reasoning to permit these

men to decide the rightness or wrongness of the act which brought them in contact with the law, to what can we turn to explain these anti-social acts? In a large dispensary clinic like that of the Psychopathic Hospital, one finds many individuals very early in life struggling blindly (as every other human being does) to attain their share or some portion of what they may consider their share of happiness. Quite naturally they form their ideas of happiness, or perhaps more fundamentally and appropriately what ought to be called pleasure, from the environment into which they have been born. During these early years of life, the child is acting purely on the instinctive level where good and bad is interpreted in terms of pleasure and pain, and moral judgments are as yet unformed.

The correlation between these early character twists, as seen in a dispensary clinic, and the end-results as manifested in crime and seen in our reformatories and prisons, is not only intensely interesting but equally important. Any attempts to minimize crime, to understand and reform the criminal (rather than punish him), cannot neglect a study of the sources from which conduct gets its driving forces and the environmental factors which tend to guide and direct the force.

1. Recently a little girl, just under fifteen, was brought to me at the out-patient clinic with a history of having entered the home of a girl chum and stolen various articles. The home conditions of the patient were good. The school history was that of the average child of her age. Physical and mental development normal; mental age, 12 $\frac{7}{12}$ ; no history of misconduct prior to February, 1921. When she found the key to her friend's house in the cloakroom at school, she entertained the idea at once of entering her home and obtaining a dress and several other articles which she coveted. The patient was quite frank in relating the story of her delinquencies, and at no time has she made any effort to minimize the misdeeds. It appears that her girl chum, whose house she entered by means of the lost key, had just gone into long dresses and that for some time past the patient has been very envious of her chum's clothes, which were more pretentious than her own. Whenever her chum came out in new clothes or displayed new things, an unkindly feeling was awakened in the patient. Towards others than her chum, this feeling was not marked.

Here we are dealing with an emotion (envy) which is common to all of us in varying degrees, but in this particular case it is exaggerated and reinforced by jealousy, and has led to conduct which one must consider anti-social. It is most important for this individual to appreciate her inclinations toward being envious, and that it is an undesirable character trait which must be overcome ere it leads

her into serious difficulty. The negative self-feeling and the sense of being denied which accompanies, in fact is the basis of envy (McDougall), produces an emotional state which is apt to linger a long time and demand satisfaction frequently in some anti-social act.

It is an old and interesting observation in relation to human reactions, that it is invariably easier to lend a helping hand, to be genuinely sympathetic, to experience real sorrow at the downfall or misfortune of a friend, than to rejoice and be exceedingly glad when he is successful. There is nothing that puts a friendship to a greater test than to see some one who has always shared the same social, intellectual and economic level, suddenly or gradually forge ahead to reach heights and accomplish aims which make a gulf of which we are conscious. Envy, though it may never be expressed or even admitted, steals into the life of him who has been left behind, and frequently there is bitterness in his heart.

2 The following is the brief history of a boy fourteen years of age, who recently came under my observation for the following reasons: Had been peculiar, had attacks of temper, lost control of himself, threatened to kill his mother, said to have assaulted a small boy on slight provocation.

His home environment has been good. His father, who died two years ago, was a graduate of Harvard University. He was a rather visionary man, who thought a good deal and accomplished very little. His mother is an intelligent, refined woman, who now earns a living for herself and the patient. His developmental history is negative. He had a tendency to be precocious, both mentally and physically. He finished the eighth grade, doing well, though not brilliantly. Mental age, 12 $\frac{7}{12}$  years. He started in high school, but gave it up on account of nervousness. He then worked in two different laboratories, as an assistant, doing very satisfactory work. He had the usual interest in amusements of the average boy. Has always been ambitious. Was not seclusive or given to depressed periods. Since the death of his father (two years ago) a change has been noticed in him. He has had periods of moodiness, depression and violent outbursts of temper. These last are usually directed against his mother, though occasionally against the neighborhood boys. He once injured a small boy by twisting his arm. In his outbursts, he is quite wild in his behavior, is profane, and on one occasion threatened his mother with a knife. They have increased both in frequency and intensity. He has also been increasingly disobedient and defiant, and has resented any restraint. However, when in the presence of authority, such as a physician, he manifests a certain amount of control, which disappears again when the restraining influ-

ence is gone, and he then only abuses his mother the more.

During this same period (since his father's death), he has developed a certain grandiose trend. In an indefinite way, he expects to go through school and college, to study in Germany, and returning home, to discover and create things. His particular interest is in chemistry and physics. He goes so far as to buy apparatus with money earned, and performs experiments; but, just as his plans for further education are hazy and formless, so the experiments are usually of a rambling nature, with no well directed aim or purpose. His ambition and his feeling of superiority loom large, but he shows impatience in doing the necessary drudgery to attain what he wishes and thinks himself capable of doing.

There is a history of minor pilfering over a period of a few months, usually from people he dislikes. Once he was surprised by his mother in erotic practices and was severely upbraided. He reacted in a despairing, contrite manner, was very self-deprecating and threatened to kill himself. This attitude was in marked contrast to his defiance of difference of opinion in other matters.

It is of interest that, notwithstanding the fact that delusions and hallucinations are absent, he does present marked mystical tendencies. In common with his mother and father, he has a belief in spiritualism. He has received messages, he says, from his father, and feels the possibility of mediumship power in himself. Music has a strange effect upon him which he has difficulty in describing. It is usually accompanied by deep melancholy and thoughts of his father. He has visions of his father in objects just as he is about to go to sleep. He practices concentration, and at such times is able to make blank the faculties he uses every day, and sees things "where the brain used to be."

In the foregoing case, one dates the origin of the character twists from the death of the boy's father. It may have been the restraining hand which guided and directed the lad's activities along the proper channels or, what is more likely, it was the lad's unusual attachment and the high esteem in which he held his father. To him, his father was his ideal man of education and unlimited possibilities. It mattered not that none of these possibilities had been realized. The approbation which came from his father was in itself sufficient reward, and to him the greatest of all pleasures. Therefore it is not surprising that upon the death of the father, followed the depression and the suicidal ideas. He felt that he was no longer understood and it was only a man like his father who was capable of understanding him. Nothing seemed worth while. No longer was there any praise or blame for which he cared. Nothing but definite, rigid, iron-

bound authority held him in check. Life and its realities gave him no pleasure. It was here that he began to play with spiritualism, to indulge in autohypnotic states, hypomagogic hallucinations and expansive ideas. He was out of harmony with the world in general and was being dominated entirely by his emotions. He indulged in erotic practices and permitted his anger to be expressed without any inhibitions, threatened his mother and abused his playmate. Thus we find both the motor and mental aspects of this boy's life operating without direction or restraint, obviously a condition which will lead him into serious conflicts with society unless a way is found by which he can adapt himself to his environment or some modification of his environment, in order that he may meet the problems of every day life in a normal, healthy way.

3. Another case, a girl, aged 20, was brought to the clinic for a routine mental examination, with a question of having an honorable discharge from parole. From a bad-tempered girl, who was delinquent in many respects, she has, through training, become self-controlled and trustworthy. Her father is a street laborer, and, though a steady worker, is said to be a moderate drinker, very excitable, unreasonable, and very unsympathetic towards the patient. When young, he was said to have been "wild." Her mother, who is dead, though illiterate, was a good, efficient woman. The stepmother, on the other hand, has quite a different makeup, and has, on occasion, abused the patient. There are several siblings, two of whom, brothers, ran away and are otherwise delinquent. The others are well behaved.

As for the patient, she was said to have been a "nervous" child. Had enuresis up to the age of 13 and has been treated for both syphilis and gonorrhea. When 14, she was dismissed from the sixth grade because of irregular attendance, as her stepmother kept her at home frequently to help care for the other children. There is no question of mental deficiency or retardation (mental age, 14). She was very unhappy at home as she received sympathy and affection from no one and had to work very hard. It is not surprising that, under existing conditions, certain delinquencies began to manifest themselves. She began to take money from her father, and when 13, would often stay out late at night. Later, she had a record of being sexually promiscuous. Eventually she was placed with an agency. For several years her delinquencies persisted and were associated with periods of sullenness and depression. Finally, she made contact with an environment which meant much to her future welfare. Through training, example and kindness, she learned to control her moods and to get a proper perspective on social standards and values. As a result, she was much happier, became an efficient worker, and



was honest and straightforward in her dealings with others.

Case No. 4. Following is the history of a boy, aged 13, who without any previous record of conduct disorder, committed larceny. His family and developmental history are negative. His father was drowned when patient was 1 year old, and he has been living with a foster mother who thinks well of him, and with whom he is apparently happy.

He has an unusual makeup and is unlike the average boy of his age, inasmuch as he does not care to go about in groups with them, playing games, etc., and heretofore he has never gotten into the usual trouble which most boys are apt to through their practical jokes and minor delinquencies. He has always been considered honest and truthful. He has a good school record (mental age 11). He is very quiet, talks but little, and spends most of his spare time in designing and building aeroplanes. He spends much time reading books of adventure and ones that are inclined to be sensational.

Out of this background, and much to the surprise of those who know him, he deliberately planned and broke into a small store with the intent of obtaining money from the cash drawer. The idea first came to him while doing an errand for his foster mother on Sunday evening. He looked the situation over during the week, obtained a knife with which to remove the putty from the window, and planned to make an entry. He was detected by the police, taken to court, put on probation, and later sent to the clinic for mental examination. Up to the present time, the only explanation we have been able to obtain is that he got the idea from the newspapers.

The foregoing is the history of a case that is under observation, and represents well a rather large group of individuals where some anti-social act of more or less gravity obtrudes into the life of the individual. Sometimes these acts are premeditated with great care and consideration. More frequently, they are of an impulsive nature, and it is with great difficulty that one is able to determine the factors which make for these delinquencies. We attempt to satisfy ourselves by calling them accidental offenders, but "after all is said and done," this simply indicates we have not been able to correlate the cause and the effect. It is of greatest importance that these cases be treated with utmost consideration and that insofar as possible to minimize the moral aspect of the anti-social act. It is not infrequent that we find individuals developing a very marked feeling of inferiority, and condemning themselves out of all proportion to the gravity of their misdemeanors. We also find that the friends and relatives, in their effort to make the misconduct of the individual a lesson not to be forgotten, are continually reminding

him of his weakness, until the individual feels that it is quite impossible to outlive his present disgrace. The courts, reformatories, and prisons should be utilized only after other measures have failed, and it is here that the psychiatric out-patient clinic may serve both the courts and the community by providing treatment rather than punishment for the juvenile delinquents.

5. This small boy, aged 6, was brought to the clinic because of his cruel behavior. Both his heredity and his home environment are very poor. He was the child of his mother's second husband, she having been divorced from her first husband when nineteen years of age, because of desertion. His father was an epileptic and a hard drinking man, cruel and abusive to his family, whom he deserted periodically. He is the oldest of eighteen children, barely passes the illiteracy test and never adequately provided for his family. The patient's mother is a strong, healthy woman with a good reputation, has always worked hard for herself and her children. Was continually abused by the patient's father, even when pregnant. Their home was one of poverty and hardship, where there was continual quarreling between the parents.

Patient lived with his mother until six years of age, when he was placed in an excellent home with a motherly and refined foster mother. There is nothing of note regarding birth of patient and early development. He had the usual children's diseases. He has attended school but three weeks in all. There is, however, at present, no question of mental retardation (mental age, six years).

By the time he was three years of age, he was a well-trained child, cleanly in dress and habits, and with no evidence of intellectual inferiority or personality defects. It is of interest to note that during the next three years, owing to economic stress, the mother found it necessary to be away from home practically all the time. It was during this period that a change was first noticed in the lad's personal habits.

In April, 1920, he was sent to the State Infirmary with a severe case of whooping cough, and during this time was considered dangerously ill. He was discharged ten months later, February, 1921. Both mother and father visited the child separately, without the other's knowledge, and each reported a peculiar mental change in child and also an indescribable change in personal appearance.

Dating from that time, he has become untrained in personal habits. He eats what is put before him, bolting his food. He will dress himself only if some one will stand by to make him; otherwise he will make no attempt, and in undressing, he simply rips his clothes off. He is an habitual bed wetter. He has no sense of decency and will expose himself before

people without shame. He had what have been called "stubborn fits," when from ten to fifteen minutes he would make no response to questions, even when attempt was made to interest him. These spells would occur either when sitting in a chair or walking the streets. His face would become pale and he would grit his teeth. There was no further epileptoid manifestations. Because of his tendency to cruelty, he cannot be left alone with younger children. He will do such things as bending their fingers back until they scream and will throw anything at them upon which he can lay his hands. If there is nothing handy, he will grab off his shoes and throw them. If anyone attempts to retaliate, he immediately shows his cowardly side. Neither punishment nor coaxing has any effect upon changing his behavior. He would, at times, have periods of one or two days' duration when he is passive, dull, sullen and morose.

A few weeks previous to his examination in the clinic it was noticed he was cruel to chickens. He would very deliberately, and apparently not excitedly or angrily, attempt to tear a chicken apart by pulling the legs in opposite directions. He probably would have succeeded in killing several had he not been prevented. Lately, he has also bitten three boys, and has repeatedly bitten himself when anyone was present to observe it. There was no indication that he did it when alone. For five consecutive nights he has gotten out of bed, stripped his night clothes off, and raced naked about the house, awakening several people. He appeared to be having a glorious time, and when put to bed, would roll out again and start the same thing over. He has been seen to kick inanimate objects, sometimes in play, more often viciously. On one occasion after leaving the clinic, he told the person who brought him that the doctor was down on him, hated him, and that he had struck and hurt him when, he (the patient) had not done a thing. He said he had hit the doctor in return.

Any attempt to understand the personality defects manifested in the above case must take into consideration, first, heredity; second, acquired physical illness; third, environmental factors. The patient's father was said to be an alcoholic and an epileptic, but probably a more intensive history would show that he was an individual of an unstable mental makeup who utilized alcohol as a crutch to help him over difficult situations, and that the convulsions were the result of his nervous instability plus alcohol. The heritage from such a parent, though perhaps not in itself sufficient to account for the personality defects in the offspring, had the extraneous factors, such as physical disease and bad environment been eliminated, must be considered under the existing condi-

tions. In fact, it is noted that during the first three years of the child's life, he was, apparently, quite normal. At this time, the influence of the mother was removed from the home, due to economic stress, and the lad was very much neglected. Too much freedom in such an environment must necessarily leave its mark on the character of the youth. We are quite aware that physical disease itself is capable of rendering marked changes in personality. The question of environment has been discussed in the consideration of the other cases and needs no further emphasis at this time. In the treatment of the above case, the only factor that is amenable to change at this time, is that of environment, and it is at this point that we must make our contact. The first important step is to place the child in such surroundings so he will receive judicious disciplining, proper education, and make daily contact with persons and things that will give him opportunities that he has hitherto not known.

A dissertation on such cases as have been recorded in the foregoing pages, perhaps, at first thought appears to be an elaboration of the obvious. The mechanism by which an attempt is made to explain many of the so-called character twists may be entirely erroneous, and further study of these cases in the light of a more comprehensive history and clearer understanding of the individual's mental makeup may require radical changes. It is neither the individual case nor the particular explanation upon which I wish to lay stress, but rather that large group of cases which come under observation of the parent, the teacher, the probation officer, the judge, and finally, the psychiatrist, and the general method by which each case should be studied. It is not sufficient to interpret their degree of responsibility in terms of intelligent quotient and mental ages, neither are we much enlightened or helped in the solution of our problem by seeking refuge in the fatalistic and pessimistic realm of heredity.

It is only after careful study into all the different aspects of the individual's life, which includes mental and physical heritage and the environment in which they have developed, that we can get a proper perspective between the cause and effect of their personality defects. Any analysis of conduct which does not take into consideration the instincts, emotions, and the will, as well as the intellect, cannot but fail to be productive of results that are worthy of consideration. Mercier, in a statement regarding conduct, makes it dependent upon desire, and in conclusion, I will quote the following: "Man is ever striving. He sets some aim before him. He seeks to accomplish some end. Corresponding with this attitude of man towards the world in which he lives, he has a fundamental attitude of mind



which is called desire. Desire is the motive power of all conduct. Inherent in human nature are certain deep-rooted desires, which may probably all be traced to their derivation in one primitive and fundamental craving, which lies at the root of all human, as of all animal, dispositions. From each of these, many subsidiary desires are derived; and, in all conduct, desire of some kind is the motive power. Conduct is the means by which we seek to satisfy desire."

NOTE.—To Miss Sarah F. Shetler I wish to express my thanks for the time and interest she has spent in getting the family history of the foregoing cases. D. A. T.

### THE SURGICAL TREATMENT OF ULCER AND CANCER OF THE STOMACH.\*

By F. B. LUND, M.D., F.A.C.S., Boston.

THE surgery of ulcer of the stomach does not conflict with the medical treatment, and the surgeon does not want it to. I remember years ago, when Dr. Mayo came to Boston to discuss the surgical treatment of ulcer of the stomach, he was asked when ulcer of the stomach should be operated upon. He replied, "After seven complete and permanent medical cures." The medical treatment has progressed and become perfected since those days, and the check upon the results given by the x-ray has helped us in estimating its effects. It is still, however, often unsuccessful, except in the hands of certain physicians who devote themselves to its study and practice; and I may add, the patients who are to be cured must be possessed of an almost superhuman faithfulness and persistence in carrying out a diet for long periods after they are much improved, and are a good deal handicapped by this necessity. The results of surgery in these cases are often more brilliant, and were it not for the slight danger of the operative treatment, would displace the latter. I say *often*, for there are ulcers whose position and certain size makes them amenable to medical treatment, and certain others, in which surgery offers the best chance of cure. No surgeon, however, if he is wise, will find fault with the patients for undertaking medical relief. If they have the time, the money, and the patience to undergo the long, exacting regime, there is no reason that they should not do so. The surgeon, it is true, will have many medical failures to deal with. He finds no fault with this, but thinks he may fairly claim indulgence for a small inevitable mortality on the ground that he is dealing with the severe and extensive ulcers which the medical man has failed to relieve, and in patients who are weakened by hemorrhages and whose ulcers have contracted adhesions, which render operation difficult. In re-

gard to the danger of the development of cancer in chronic ulcers subjected to medical treatment, I must confess that most of the cancers of the stomach with which I have had to deal have started as such and been preceded by an ulcer history, if at all, of short duration. In the duodenum the lesions of which are most favorable to surgical cure, cancer is so rare as not to require consideration. At the pylorus cancer causes early obstruction, and may, if attention is paid to the symptoms, be removed early enough for thorough work. In other words, cancer in this location becomes so rapidly surgical that no intelligent medical man will treat it for any length of time. Cancers do not improve under treatment. If under adequate medical management, a chronic ulcer does not begin at once to show improvement, it should be turned over to the surgeon.

A brief discussion of the diagnosis is in order before attacking the problem of treatment, and special attention must be given to the determination of the nature, position and extent of the ulcer.

Our methods of diagnosis fall into four classes: (1) the history, (2) the physical examination, (3) laboratory tests, including x-ray, (4) exploratory operation. Before taking these in turn, we must remember that there is none of them which can be depended on alone for a diagnosis. We must use them all and depend on them all. We want not only a diagnosis of ulcer of the stomach; we want to know where it is, how large it is, how long it has existed, whether it is adherent, and as many other facts as possible before we attack it with the knife.

For purposes of this paper, ulcer of the duodenum will be classed as ulcer of the stomach. The first portion of the duodenum with its acid contents, is frequently the seat of ulcer, and is strictly speaking, physiologically, a part of the stomach. It becomes ulcerated under the same conditions. Ulcers of the duodenum are even more common than those of the stomach, and are among the most amenable to surgical treatment.

It is frequently stated, both by surgeons and physicians, that it is possible to make a definite diagnosis of duodenal ulcer from the history. While in a fair proportion of cases this is so, there are a large number in which we do not get the characteristic definite interval of time, the hunger pain relieved by treatment; but the indigestion and pain come on at irregular intervals. The pain is often not a pain, but an indefinite feeling of distress. Vomiting, we should remember is rare. Vomiting of blood, however, is important and may be an early symptom. Physical examination is often of little value. We sometimes find a definite tender point, often no tenderness at all. In ulcers at or near the pylorus we are apt to get the most tenderness, as they may be compressed right against the spine by the exam-

\* Read before the New Hampshire Medical Society at the Annual Meeting, May 26, 1921.

ining hand. Ulcers of the cardia are protected from pressure by the ribs, and even ulcers of the duodenum may be so deep as to show little tenderness.

A great deal of interesting work has been done recently on the causes of ulcer pain, and we are more and more inclined to believe now that it is not due to the action of the acid gastric secretions on the open ulcer, but to hyperperistalsis, the powerful contractions of the stomach muscle. For instance, it occurs in cases that are not hyperacid. Hyperperistalsis we know occurs in ulcer, gallstones, in appendicitis, in fact, any irritation of the gastrointestinal tract may induce hyperperistalsis. Question,—is not this hyperperistalsis the cause, or one of the causes, of ulcer? Probably we are all acquainted with frequent association of appendicitis with gastric ulcer.

**Laboratory Tests.** These give us the percentage of hydrochloric acid, presence or absence of lactic acid, and microscopic blood. Though hyperacidity points to ulcer, ulcer may, as we all know, occur without it. Absence of hydrochloric acid points to cancer, but may occur in chronic ulcer.

**The X-ray.** The x-ray shows us peristalsis by a transitory incisura, a depression which runs towards the pylorus. It shows hyperperistalsis by a deep transitory incisura, contractions by a permanent incisura. Often without a real scar contraction, there is a more or less permanent incisura opposite an ulcer. The ulcer itself is shown by a nipple-like projection, a "niche" which indents the stomach wall and into which the bismuth projects. The deeper the ulcer, the more prominent the niche. The irregular outline of a cancer is also well shown by the x-ray, that irregular line of the thickened surface of the stomach where peristalsis is absent. This is often unmistakable. But consider a moment: suppose, as is not often, but sometimes the case, the ulcer is not situated on the lesser curvature, the sky-line of the stomach, so to speak. The x-rays going from before backward cannot bring it into relief, and through the thick bismuth masses we cannot see it at all. This may happen even in extensive cancers. A lateral view may sometimes help in these cases, but is sometimes unsatisfactory. I have operated upon three extensive cancers upon the posterior wall, in which the patient and the physician, lulled into false confidence by a negative x-ray, had lost much valuable time. In ulcers so situated the x-ray may also be unsatisfactory as a guide to the results of treatment. Fluoroscopy is more important than the plate, but may fail, as in a case of which I shall show you the slides. Such an ulcer may be shown by a lateral view, but these are difficult to make and usually unsatisfactory. Any physician, as well as any surgeon, who deals with these cases should be familiar with the examination of plates, and, if

possible, with fluoroscopy. At any rate, let him see the plates, and not blindly depend upon a report. Even an x-ray man may make a mistake, just as a physician or a surgeon may. One of the cases in which I was helped by the x-ray is the one in which a constant incisura enabled us to treat an ulcer which was too shallow to show a niche but had caused severe, even dangerous hemorrhages. Another position in which cancer of the stomach may fail to show in the x-ray is at or near the cardia. Most bismuth meals are too small to fill the stomach entirely, and you know how often the plates only show the outline of the lower or pyloric portion of the stomach, the upper portion under the diaphragm being filled with a big gas bubble. The bismuth meal, not being in contact with these growths, naturally does not show them up, and we are compelled to resort to exploratory operation. These cardiac growths may sometimes be shown by examinations in the recumbent position, but these, again, are not always satisfactory.

Duodenal ulcers commonly are on the anterior and superior surfaces and show up beautifully in the x-ray, and even if they do not do this, they show deformity of the duodenal cap. In normal stomachs the cap is so well outlined, with its wide-sweeping curves, that even slight deformity is shown by the x-rays extremely well, and excluding the definite deformity (straight line or large curve) due to pressure of the lower surface of the liver or gall-bladder upon the duodenum, we can usually make a diagnosis either of acute ulcer or scar from an old ulcer. The x-ray also gives us evidence of stasis. This, however, may mean stricture of the pylorus but spasm, due to ulcer at a distance, gallstones, or even appendicitis. In this event, the administration of atropine will often relieve the spasm, and cause the stasis to disappear. Dilatation of the stomach occurs only in real stricture of the pylorus, develops very gradually, and is always preceded and accompanied by thickening of the gastric walls—muscular hypertrophy. It must be carefully distinguished from the apparent dilatation due to the elongation and ptosis of the stomach, which is a part of general enteroptosis, the so-called "fish-hook stomach." The x-ray often shows fixation of the stomach by an ulcer which has formed adhesions to the liver and the pancreas. In these, the stomach holds the same position in the standing that it does in the lying position, which is quite contrary, as you know, to the behavior of normal stomachs.

In regard to stasis, we must remember one fact, that in extensive ulcers or cancers of the stomach, even at the narrowest portion, the pylorus itself, we may get no stasis, but an abnormally rapid emptying of the stomach. Why? Because the presence of the lesion induces hyperperistalsis, while the muscular tis-

sue of the pylorus is so infiltrated by inflammatory or cancerous tissue that it not only cannot contract, but is actually held open. The contents flow through it like water through a rigid pipe, and as a result, there is no stasis. On the other hand, the stomach empties faster than it ought. The stream is never cut off.

Now, what can the surgeon do for ulcer of the stomach and duodenum. First, acute ulcers. Generally speaking, they are medical. Acute ulcers of the stomach are usually not sent to the surgeon unless they perforate or bleed. Of perforating ulcers, I do not need to speak. We all know the imperative importance of surgery here, and the only matter of interest is whether we ought simply to sew up the perforation or combine suture with a gastroenterostomy. This question will not be discussed here. Hemorrhage in acute ulcer is usually medical, but if severe or repeated, may require surgery. Transfusion in these hemorrhage cases helps us a lot. We were, in the old days, often compelled to stand idly by a pulseless hemorrhage patient, because he was too feeble to operate upon. Now, we can replace his lost blood by transfusion, locate the ulcer by x-ray, operate and destroy it by cautery and suture. By this method the aid of surgery may be extended by patients to whom the waiting policy is attended by the risk of a fatal repetition of the bleeding.

On the subject of chronic ulcer, when surgery should be applied, how it should be applied, and what does it offer in the way of results, we come to the part of this paper that has the most interest for us as surgeons.

The operation of gastroenterostomy was first performed for cancer at the pyloric end of the stomach. It was, and was regarded as, an operation for drainage. The stomach, not being able to empty itself through the pylorus, was given adequate drainage by this method of short circuiting. It then was applied in the treatment of extensive indurated ulcers at the pylorus, causing stricture and dilatation, and soon came to be used for inflamed ulcers at the pylorus and duodenum which were not the cause of stricture. It was found that even these cases did wonderfully well and the ulcers were often cured. It was easy to see why patients with obstructing lesions got better, but how were we to account for the cures in the non-obstructing cases? The best explanation, first suggested by Patterson, is that a little bile and pancreatic juice gets into the stomach through the gastroenterostomy opening, neutralizes the hyper-acidity, prevents the spasmodic contractions, and allows the ulcers to heal. At any rate, it held and still holds that the best results from gastroenterostomy are obtained in extensive indurated ulcers at the pylorus and duodenum. It seems to be true, the larger the ulcer, the more thickening and inflammation, the better the result.

Into the gradual evolution of the technique of gastroenterostomy I do not need to go at length. You are all familiar with the change from the anterior operation to the posterior operation; from the short to the long loop, and finally to the posterior operation with no loop at all. The gradual elimination of the dreaded vicious circle has taken place; first, by the change to the no loop; second, by careful placing of the loop so that kinking does not take place; third, by great care in the technique of suture so that accurate adjustments are made without tension. Silk and linen sutures are now discarded, and chromic catgut is used throughout. It has been demonstrated that by far the most frequent cause of jejunal ulcer was the use of the non-absorbable suture, which became infected, hung, and irritated in the line of suture for long periods, and caused ulceration. At the time when frequent cases of vicious circle were occurring after gastroenterostomy, Finney designed his ingenious method of pyloroplasty, which is our most efficient method of widening the pylorus and which, of course, does away with the loop. It has the advantage that it may be combined with excision of the ulcer. It is, however, a little more bloody and difficult to perform than gastroenterostomy with the clamps, and the final perfection of the modern gastroenterostomy has become so great that Finney's operation is seldom done. It has its place, however, especially in simple stricture of the pylorus when the ulcer has healed. One great limitation in all pyloroplasties for ulcers of the duodenum, however, is that if the ulcer is extensive and involves a large portion of that organ on the terminal portion of the first part, at a distance from the pylorus, no plastic on the pylorus itself can affect it because the operation will be performed entirely on tissues to the proximal side of the ulcer. It is in these cases that gastroenterostomy does the most good, and they almost always heal after its successful performance. This is fortunate, because it is difficult, bloody and dangerous to excise extensive, inflamed, adherent ulcers situated far down upon the duodenum.

When we come to smaller ulcers of the pylorus, and that organ is movable, so that excision of the pylorus may be safely combined with the gastroenterostomy, I have no quarrel with excision, especially as at the pylorus, or just to its gastric side, one cannot be sure that an indurated ulcer is nonmalignant. Here is where the greatest judgment is required, the mobility of the ulcer and the condition of the patient, determine whether we are to excise or do a gastroenterostomy alone. In case of doubt, do a gastroenterostomy, and your patient will probably get well. These smaller ulcers near the pylorus ought not to be operated upon until medical treatment has been thoroughly tried, even if they are discov-

ered in the course of an operation for some other condition. Gastroenterostomies for small, non-obstructing ulcers do not do well, and excision practically substitutes a traumatic scar for an ulcer.

To digress for a moment. These ulcers at the pylorus in the x-ray plate frequently show a broad, flat termination of the shadow, as if the pyloric end of the stomach were pressed against a flat board. This is often regarded by x-ray men as diagnostic of malignancy, but it is not. I have found it is as often in chronic ulcer as in cancer. It is hard to see how an x-ray man can, by a shadow picture, make a differential diagnosis which the surgeon cannot make with his eye and finger on the lesion.

The difficulty may be illustrated by a case in which a preoperative diagnosis of cancer had been made, in a woman to whom I was called when she was greatly weakened by hemorrhage. On opening the abdomen, I found what I thought was a cancer at the pylorus. As her condition would not allow of an excision, a gastroenterostomy was done, and she rapidly improved. On reopening the abdomen, two weeks later, with a view to removal of the growth, it was found to have practically disappeared. The possibilities of the two-stage operation will be illustrated under the subject of cancer.

Small ulcers at the pylorus do well by a combination of excision and pyloroplasty, but I am convinced that in these cases medical treatment should first be attempted. The medical treatment is also indicated in small ulcers of the lesser curvature or other portions of the stomach, provided there is no excessive hemorrhage.

*Large Ulcers on the Lesser Curvature.* I have seen these cases recover after gastroenterostomy, and I have seen reports of their recovery under medical treatment, but have not had an actual case. The excision of large, indurated ulcers on the lesser curvature combined with gastroenterostomy, may be a bloody and difficult operation, and the mortality is admitted to be high, even in skilled hands. The excision of a "sleeve" section of the stomach, including the ulcer, is often easier, but we now get occasional reports of the formation of an hourglass effect by the contraction of the ring of scar tissue which surrounds the stomach. Balfour's suggestion of cautery puncture, with suture of the ulcer, is of the greatest value. The ulcer is destroyed without the hemorrhage, which must always accompany excision, and there is little shock.

*Hemorrhage.* Hemorrhage is only one of the symptoms of ulcer, and in most cases is treated only as a part of the treatment. Long continued, gradual bleeding, however, weakens the patient, and should lead to the consideration of surgical treatment earlier than in cases which do not bleed. Sudden,

profuse hemorrhages in young people usually get well under medical treatment, but we have all seen young women die of them. If severe, and especially if repeated after medical treatment, we need have no hesitation, now that we have the wonderful aid of transfusion, in operating upon these patients. A cautery puncture and suture, Balfour's procedure is indicated, and it is a very pleasing experience, after a transfusion, to find your patient with a strong pulse and good color, and be able to operate without danger. It may be difficult to locate the ulcer, but as aids to this, we have the sentinel gland, and the incisura, and the x-ray.

*Cancer of the Stomach.* The one discouraging thing about cancer of the stomach is the lateness of the period at which we get the cases. Cancer of the stomach usually belongs to the type of adenocarcinoma, which we know to be slow of growth. Nevertheless, the diagnosis is often made very late. Unless the growth is at the pylorus, when it causes early obstruction, the patient not infrequently loses weight and strength without realizing that his stomach is at fault. They are often treated with drugs and diet for long periods, without even having x-ray examinations made, and in some very bad cases which have come to me lately, the x-rays have been misinterpreted. At any rate, I know that in the vast majority of cases that come to me, the growth has metastasized to the glands, colon or liver, and on exploration I find that I cannot move it. However, I very rarely deny these patients exploration, for in several cases in which the x-ray, and clinical evidence, almost made us despair, I have been able to remove the growth. The removal of the cancer of the stomach is a major operation, and more depends upon the personal equation and skill of the operator than in the vast majority of surgical procedures. The removal must be thorough, extending well into the healthy tissue above and below, and adequate drainage must be provided. Until a few years ago, the old method known as the Billroth number two, was the preferable. It consists of excision of the growth, inversion and purse-string suture of the duodenal end, closure of the opening in the stomach and a gastroenterostomy. This was easier and safer than the old Billroth number one, which, as you know, consisted of suture of the incision in the stomach down to a point where its opening coincided in size with the end of the duodenum and direct anastomosis with that end. The dangers of this were, (1) tension, (2) leakage at the point where the suture of the stomach wound came in contact with the anastomosis. Polya's operation was a great improvement, and enables us to save a lot of time, for it used the line of excision in the stomach for the anastomosis, and we do not have to sew up this very long

opening and then make another for the anastomosis. As first performed, however, by the posterior route, it has been found to carry the danger of constriction of the intestinal loop by the opening in the transverse mesocolon and the method of bringing the loop up in front of the colon has made it by far the safest and easiest operation for cancer of the stomach.

As stated, by far the larger number of my exploratory operations for cancer of the stomach result in finding a growth which has taken months, or years, and produced a metastases to the colon, lymphatic glands or liver, and is absolutely inoperable. I am sure that this condition reflects very badly upon the intelligence of the medical man and often of the patient. People go on, and, I am sorry to say, some doctors watch them go on, with gastric symptoms, losing weight, strength and color for long periods. Carelessness and complacency are the reason for very many of our bad results in cancer. Let us try and see to it that they are better.

There is one more point that ought to be considered—the procedure to be adopted in gastric cancer too extensive for gastroenterostomy. If there was evidence of obstruction of the pylorus, I used to perform gastroenterostomy for temporary relief. This sometimes relieved the stasis for a while, but always left the patient with the same nasty, bleeding growth he had before. The best that could happen was for him to live two or three months longer, and then die of a return of his symptoms. Now, these patients are usually so uncomfortable and miserable that I do not care to prolong their existence. Therefore, contrary to my former practice, I usually sew up the abdomen without doing a gastroenterostomy.

In regard to excision of cancer of the stomach, quite the contrary can be said. Occasionally we get a case in which the patient remains well for five or more years. At any rate, we remove a nasty, bleeding, ulcerated mass from the stomach, and the patient usually begins at once to gain in weight and general condition. Gains of thirty to fifty pounds are not rare, and the patient has from six months to several years of good health. Such a prolongation, in the later years of life, is not to be despised, and considering that, without operation, the condition is absolutely hopeless, it seems quite worth while to do the work. The immediate convalescence from a resection of the stomach is as simple as that from an ordinary gastroenterostomy, and that operation in time causes the patient no more discomfort than an operation for appendicitis.

One more point and we are done. In determining whether a cancer is operable or not, we ask the same question as we did in deciding about the excision of an ulcer,—can the operation be made easy, and therefore safe?

Anything which is movable can be drawn well out into the wound, and if there are no metastases beyond our reach, can be removed. In definite cancer, we are justified in taking more risks than in ulcer, because we are dealing with a condition that without operation is hopeless. If a patient is very weak, but the cancer is movable, we may perform a two-stage operation, which I adopt more often now than formerly. The stages are: first, a gastroenterostomy, performed as far to the left in the stomach as possible in order to have plenty of healthy stomach for the performance of the resection; second, excision of the growth, with closure of the duodenum and of the end of the stomach. The second operation is complicated sometimes by adhesions from the first operation, but after an interval of two weeks of intensive feeding, the patient will stand the excision perfectly well, and the gastroenterostomy having been done, we do not have to allow the extra time for it. Generally speaking, the one-stage operation is more satisfactory, but two-stage operations, although disagreeable both to the patient and the surgeon, will often save a life.

The addition of transfusion and the two-stage operation to our repertoire have considerably extended the possibilities of gastric surgery.

### Current Literature Department.

#### ABSTRACTORS.

GERARDO M. BALDONI  
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JOHN B. SWIFT, JR.  
WILDER TILSTON  
BRYANT D. WETHERILL

#### AN APPARATUS FOR FRACTURES OF THE HUMERUS WHICH ASSURES MOBILITY OF THE ELBOW.

SEJOURNET, M. P. (*Revue de Chirurgie*) offers an apparatus for fractures of the humerus similar to that of Delbet for thigh fractures. The apparatus has been found eminently satisfactory in 32 cases. *The Apparatus.* It is an aluminum frame composed of three splints, one posterior and two lateral. These are supported at the upper and lower ends by two half collars, opening anteriorly. The lower collar is provided with knobs to which rubber strips are fastened for constant traction. Movable counter-splints are attached to the lateral splints by means of a sliding frame. These counter-splints are interchangeable so that the apparatus can be used on either arm and allow it to be adjusted to varying lengths of the arm.

The external counter splint ends in an enlarged spatula which gives a close application to the lateral aspect of the shoulder over the deltoid and below the prominence of the acromion. The medial counter-splint terminates, at its upper end, in a sort of crutch, so constructed as to be closely applied to



the posterior border of the axilla, swinging around it and then lifting posteriorly to the shoulder over the supra-spinous fossa of the scapula. This crutch has a short beak and lies posterior to the axillary vessels and the brachial plexus so that there is no fear of compression. Further, this crutch is united to its counter-split by three joints, each supra-imposed on the other, so that they reproduce the movements of the scapulo-humeral articulation.

After the apparatus has been properly applied, the arm can be abducted and adducted and execute circumduction without displacing the point of support. [W. M. S.]

#### IDIOPATHIC DILATATION OF THE ESOPHAGUS.

(*Revue de Médecine*, 1921, No. 2) Bensaude and Guenoux have seen 17 cases by x-ray during 18 months. The x-ray picture is as follows: The opaque substance is arrested above the diaphragm and fills all the lower portion of the esophagus. The latter appears very large, with clearly defined edges. The lower end of the sac rests on the diaphragm and the shadow ends in a very regular point. The diagnosis is made by x-ray and esophagography, the latter being done with the patient in the knee-chest position. The esophagoscope shows regular transverse or longitudinal folds, ending at the cardiac.

The differential diagnosis lies between organic obstruction, reflex spasm from a gastric ulcer or cancer, cardiospasm, and simple nervous vomiting. A typical case is cited, with a cardia impassable to the esophagus, finally dilated from below, after the patient had been nourished for many weeks through a gastrostomy.

Various theories of the pathology of this condition are mentioned. The most probable one is that there is a lesion of the nervous system, which causes an error in the coordination of the segments of the esophagus.

In the cases cited there was little relief from surgery, atropine was not effective, but occasionally life was prolonged by the passing of bougies.

[E. M. D.]

#### JEJUNAL ULCER—POSTOPERATIVE.

MEUNIER, L. (*La Presse Médicale*, July 6, 1921.) The treatment of jejunal ulcer is surgical in nature. The writer does not believe that this type of ulcer, which follows a gastroenterostomy, is due to the type of suture used or to the trauma of the operation, but rather to the non-physiological passage of the acid gastric juice into the jejunum, without partial neutralization by the bile and the pancreatic juice.

The diagnosis of jejunal ulcer is made by the ingestion of an ammoniacal solution into the stomach and the immediate passage of the stomach tube without suction. Chemical analysis of this content for hematin is negative if the ulcer is jejunal. A second ammoniacal solution is given, with powdered charcoal as an indicator. The stool in which the charcoal is passed is analyzed for hematin. If positive, the ulcer is jejunal in type.

Treatment is surgical. Prevention is by immediately placing the patient on a careful diet after the gastroenterostomy. No meat is given for six months. The meal is begun by a fatty food,—butter, cream, potatoes cooked in water and to which one-half their weight of butter has been added, or two or three dessertspoonfuls of olive oil. The main food is vegetables, eggs, and fruits, slightly seasoned or cooked. Between meals, a glass of milk is given, and after meals a sugar-producing infusion of barley. Results by this treatment are excellent. [E. M. D.]

#### HABITUAL OR RECURRENT DISLOCATION OF THE SHOULDER.

HENDERSON, M. S. (*Surg., Gyn. & Obstet.*, July, 1921) states that capsulorrhaphy to strengthen the shoulder gave 50 per cent. cures in the 16 cases of habitual or recurrent dislocation of the shoulder. Five of the patients (31.25 per cent.) are so decidedly improved that they are more than satisfied with the operation. This percentage of improvement and the percentages of cures give good results in 81.25 per cent. It is probable that muscle pull or possible relaxation of the shoulder capsule above has not been sufficiently considered in the treatment. It is reasonable to suggest, therefore, that the pectoralis major, teres major, and latissimus dorsi be lengthened, and, if thought necessary, the region of the capsule where the supraspinatus and infraspinatus are inserted and the anterior inferior portion of the capsule be reefed. [E. H. R.]

#### Book Reviews.

*Aids to Chemistry.* By WILLIAM PARTRIDGE, F.I.C. New York: Wm. Wood & Co. 280 pp. Price \$2.00.

Partridge's *Aids to Chemistry* is a reference book, obviously intended to supplement and not to take the place of the more elaborate textbooks. There are some 50 pages devoted to General Chemistry. Here are given in clear, concise English, definitions of chemical terms and such formulae as Avogadro's Law.

The remainder of the book gives briefly yet quite completely the history, occurrence, preparation and properties of each element and its more important combinations. Organic as well as inorganic compounds are thus treated. The book is excellent for rapid reference, and would be very useful to one who had studied chemistry and wished to review the subject in preparation for examination.

*Injuries of the Peripheral Nerves.* By HENRY S. SOUTTAR, C.B.E., F.R.C.S., M.Ch., and EDWARD W. TWINING, M.R.C.S., L.R.C.P. New York: William Wood and Company. 1920.

This monograph does not attempt an exhaustive treatment of the subject. Rather it aims to gather into permanent form the results of the author's observations and special experience of nerve injuries during the war, and the application of that experience to the treatment of similar injuries in civil life. In a series of twenty-four chapters are considered the etiology, pathology, diagnosis, operative and physical treatment, and prognosis. Considerable space is rightly devoted to anatomy and to surgical technic. The book is illustrated with thirty excellent figures. It is a valuable contribution to the literature of surgical progress, an interesting by-product of the Great War.



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## ANTITYPHOID VACCINATION.

SINCE the close of the war numerous articles have appeared in the journals calling attention to the small number of typhoid fever cases in our armies. In our August eleventh number, Robey reported the cases seen in three hospital centers representing about one-fourth of all typhoid fever patients in the American Expeditionary Forces. Particular attention was called to the cases from the 77th Division. In that division there may have been some ambulatory cases, but only a little over fifty patients reached the base hospital and in some instances the diagnosis was not made until several days after admission. When a whole division has lived for several weeks in a typhoid infected area with all men subjected to the same conditions, there can be only one reason for such a small number of cases, namely, antityphoid vaccination. Why did any soldiers develop typhoid? Robey answers that question by suggesting the possibility of faulty technique, which is not unlikely when large bodies of soldiers are rapidly prepared for active service. Annual reports on the incidence of typhoid in the United States show a marked decline in the number of cases, but it is significant that the rate was lowest in 1919 when thousands of young persons vaccinated against

typhoid returned to this country. Now the immunity produced in that group of men and women is wearing off and should be renewed if we are to maintain a similar rate. It is remarked that some medical students pass through their entire course with little or no opportunity to study the disease but, notwithstanding, all evidences of decline in the number of cases, some physicians see several typhoid patients a year. Sanitary measures, valuable as they are, cannot immediately stop the harm done by the appearance in any community of a typhoid infection and unless there is some means of protecting persons from typhoid there will continue to be isolated cases and occasionally an epidemic, with its usual mortality. In antityphoid vaccination we have the means of prevention, but we fear that small use is being made of the measure. Physicians are not doing all they can to urge the use of antityphoid vaccine, although they fully realize its value. People shrink from vaccination and the constant and senseless wail of the anti-vaccinationists makes our task more difficult, but if carefully explained the public will gradually be brought to an appreciation of its importance. The State Board of Health supplies the vaccine in ampules containing the various forms of the organism. The ampule is opened in the usual manner, its contents drawn into a sterilized hypodermic syringe and injected into the arm, the second and third injections being given at intervals of four to seven days, according to the amount of local and constitutional reaction. After the first injection there is often an area of redness and tenderness about the site of the injection, but this does not last long, or it may be marked with the second injection only. There may be slight constitutional disturbances, such as headache and aching joints, but these soon pass. The method is simple, safe and protective. It should be repeated in one and one-half to two years, and should be given especially to persons about to visit foreign countries and to those who travel in rural districts.

## THE ANNUAL MEETING OF THE NEW ENGLAND SURGICAL SOCIETY.

THE meetings of the New England Surgical Society, in Worcester, September 21st and 22nd inst., were of great interest because the subjects presented covered most of the matters which are being discussed by surgeons all over the world. The quality of the papers was uniformly high and the discussions showed that the members are concerned in the problems presented. This meeting demonstrates the wisdom of maintaining this Society, both from scientific and social aspects. The JOURNAL is honored in being the official organ of the Society and the publication of the papers will add to its prestige.

Dr. John M. Gile presided in a dignified and charming manner and the sessions were conducted with dispatch but without any sacrifice of valuable discussions.

At the City Hospital, Dr. E. L. Hunt exhibited the surgical rating and follow-up system. Dr. Frank George did an arthrotomy for loose internal semilunar cartilage. Dr. R. P. Watkins did a ligation for hyperthyroidism under local anesthesia. Dr. J. M. Gile of Hanover, N. H., President of the Society, did a gastro-enterostomy by courtesy of the Staff, the patient being a former operative patient of his. Dr. Walter Bieberbach did a cystoscopic examination for hematuria. At St. Vincent's Hospital, Dr. M. J. Fallon did a hernia and appendix operation, and Dr. J. Arthur Barnes did a hernia operation. The new building was shown to the visitors.

At the Memorial Hospital, under the direction of Dr. Homer Gage, interesting clinical problems were presented in cases treated by Dr. Charles E. Ayers and Dr. Walter C. Seelye. The methods covering the meetings of the staff, with reports of all the professional activities, based on the experience of Dr. Gage in the Army and modified to meet the local conditions, seemed ideal and may be the reason for the very progressive character of the work done in the Hospital. Dr. Gage paid tribute to cordial coöperation of his resident medical officer and the staff. Dr. Adams' paper, in a previous issue of the JOURNAL bearing on this subject, should be read with interest.

Almost nothing can be said in criticism of the sessions, for every detail seemed to have been worked out by Dr. Truesdale and the committees in charge. One may be pardoned for suggesting that in the future the work could be arranged so that members could attend the hospital demonstrations at different hours and all would be relieved of a sense of disappointment incident to inability to be present at all of the exercises.

The President's address was an impressive presentation of the great problem before the profession and the people at the present time, relating to an adequate professional service in localities not in or adjacent to medical centers. He frankly confessed that although the need for physicians in some localities is recognized and is most urgent, he could not suggest the remedy. In pointing out the diminished training in Dartmouth and the suspension of Bowdoin he clearly saw that the remote districts of Northern New England are doomed to insufficient medical service which amount to tragic proportions.

Although not so stated by President Gile, one familiar with the trend of events may readily see that with the present day requirements of the Council on Medical Education of the A. M. A., a small medical school may, although doing creditable work in training prac-

titioners, be driven out of existence. There seems to be no remedy other than assistance by the State for the purpose of educating men who would be more likely to remain in that vicinity than would be the case when men go to medical colleges in the greater centers.

The address should be given careful consideration. The annual dinner was enjoyed by about sixty members, the post-prandial exercises consisting of a short but entertaining address and illustration by the President, remarks about the purpose of the Massachusetts Medical Society in taking over the BOSTON MEDICAL AND SURGICAL JOURNAL by Walter P. Bowers, Editor, an interesting comparison of ancient with modern surgery by Samuel B. Woodward, ex-President of the Massachusetts Medical Society, and an interesting account of his experiences with the members of the Society, and an eulogy of the profession by Dr. Wallace W. Atwood, President of Clark University.

About sixty-five members of the Society attended the sessions.

#### A SUPREME COURT DECISION RELATING TO PHYSICIANS.

A DECISION rendered by the Supreme Court of this state, written by Chief Justice Rugg, affirms the constitutionality of the statute which provides that the Board of Registration in Medicine may revoke the registration of a practitioner who has been guilty of gross misconduct in the practice of his profession.

This decision was written by reason of a petition for a stay of proceedings based on the contention that the conferring of medical registration implied a contract affecting the relations of the state and the individual registered under the legal provisions in force at the time of the registration, and further that qualifying laws enacted since the granting of registration could not be invoked for the purpose of revoking the registration of a physician who might be found to come under the restrictive or disciplinary features of subsequent legislation.

To the ordinary person the creation of a law means that the provisions of the act are to be obeyed and this contention of the attorneys for the doctor suspected of gross misconduct appear to have been made for the purpose of postponing action for such time as may be required to carry out the machinery of the court in dealing with petitions of this character. Fortunately the laws relating to the practice of medicine, although several times assailed, have been sustained by the Supreme Court. The administration of these laws has generally been approved by the profession and the people, and much has been accomplished under the power conferred by them. In a few instances reputable men have felt that too much activity has

been exercised in dealing with border line cases and when the doubt has been presented to the Board having the duty of passing on complaints, such opinions have been given careful consideration. Constructive criticism has always been welcomed.

Much as it is to be regretted, there will be many occasions when physicians are disinclined to conform to established ethics of practice, and the dignity of the profession and safety of the public demand the elimination of unworthy or dangerous practitioners. This decision by the Court will be a great help in future proceedings and if used judiciously and judicially will tend to safeguard the interests of the people. The approval of the public is reflected in editorials published by the daily press of this state.

Below, the decision is published both for information and also as a masterful exposition of the law.

This is a petition for a warrant of prohibition against the defendants to prohibit the defendants hearing the complaint filed against the petitioner before them acting in their capacity as a board of registration in medicine.

LAWRENCE V. BRIEY.

Rugg, C. J.

This is a petition for a writ of prohibition. The petitioner was duly licensed and registered as a practitioner of medicine in this Commonwealth in 1898 and engaged in the practice of his profession until the events here involved. The defendants are the members of the board of registration in medicine. On September 28, 1920, the board of registration in medicine summoned the petitioner before it to show cause why his certificate of registration as a practitioner of medicine should not be revoked for "gross misconduct in the practice of his profession" with specification of entering into an agreement on a designated date to perform or attempt to perform an abortion on a person named. At the hearing before the single justice it was agreed that the facts set forth in the petition as amended were true. A brief statement of facts found was filed, in which it was stated that it was not contended that the board of registration in medicine had prejudged or heard the case or made any findings as to the truth of the charge referred to in the petition, but the petitioner contended that if guilty of that charge his certificate of registration as a physician could not be taken away because he had not been convicted of any crime. It was ordered that the petition be dismissed.

The single justice filed on the bill of exceptions a certificate setting forth that no requests were made for rulings or find-

ings; that no ruling was made except that involved in ordering the petition dismissed which was made in the absence of parties on November 11, 1920; that on the day following, the bill of exceptions was filed but no exception was in fact taken unless the filing of the exceptions was susceptible of that construction and that he allowed the bill of exceptions so far as within his power under the conditions narrated.

This was a proper method of dealing with the bill of exceptions. *Riley v. Brusendorff*, 226 Mass. 310 and cases collected at 313.

The order dismissing the petition was in substance and effect a ruling that on the facts found the petitioner was not entitled as a matter of law to the relief sought. The petitioner must show that as a matter of law on those facts he is entitled to relief in order to prevail. *Boucher v. Salem Rebuilding Commission*, 225 Mass. 18.

The taking of an exception is implied from the filing of the bill of exceptions under the conditions here revealed. While the saving an exception is a substantial thing and the filing of a bill its formal expression, where the bill itself is filed under the circumstances disclosed on this record, exception was thereby saved. *Hurley v. Boston Elevated Railway*, 213 Mass. 364.

Exception to a ruling made in absence of counsel must be taken within a reasonable time thereafter. In the case at bar it was so taken by the filing of the bill of exceptions on the day immediately succeeding the making of the order to dismiss the petition. *Simmons v. Poole*, 227 Mass. 29.

The main contention of the petitioner is that St. 1917, c. 218, under the authority of which the board of registration was acting, is unconstitutional and that the board is without jurisdiction to revoke his registration and license to practice medicine.

The essential provisions of said chapter 218 are in s. 1 that the board may after hearing "revoke or cancel any certificate, registration, license or authority issued by the board if it appears that the holder . . . is guilty of deceit, malpractice, gross misconduct in the practice of his profession, or of any offense against the laws of the Commonwealth relating thereto," such revocation or cancellation not to effect other punishment provided by law; in s. 2 that there should be a hearing before the board at which the petitioner may appear with witnesses and counsel; in s. 3 that the board shall not defer action until the conviction of the person accused; and in s. 4 that the Supreme Judicial Court may reverse the order of the board upon appropriate proceedings to that end.

The right to follow a legitimate calling for any lawful purpose is sacred and is protected both by the Constitution of the U. S. and that of this Commonwealth. The right of a physician to toil in his profession as well as that of all other citizens to labor in their chosen work is both liberty and property, partaking of the nature of each, and is guaranteed by constitutional mandate from unwarrantable interference. U. S. Constitution Art. 14 of Amendments, s. 1. Declaration of Rights, Art. 1, 10. *Coppage v. Kansas*, 236 U. S. 1. *Bogni v. Perotti*, 224 Mass. 152. This right with all its sanctity and safeguards is not absolute. It must yield to the paramount right of government to protect the public health by any rational means. No argument is required to demonstrate that legislation reasonably designed to promote the general health of members of society is within the welfare clause of our Constitution, c. 1, s. 1, Art IV. Laws requiring the examination, registration, and certification of physicians and prohibiting all others, with exceptions not here material, from practising medicine have been upheld as not violative of any constitutional provision. *Com. v. Forn*, 196 Mass. 326. *Com. v. Jewelle*, 199 Mass. 558. *Com. v. Houtenbrink*, 235 Mass. 323. Their validity rests upon the proposition that those who undertake to cure the ill, to treat the ailments, to prevent diseases, and to relieve the suffering of the race may be required to show themselves possessed of technical skill to those ends. Soundness of moral fibre to insure the proper use of medical learning is as essential to the public health as medical learning itself. Mere intellectual power and scientific achievement without uprightness of character may be more harmful than ignorance. Highly trained intelligence combined with disregard of the fundamental virtues is a menace. A physician, however skillful, who is guilty of deceit, malpractice or gross misconduct in the practice of his profession, even though not amounting to an offence against the criminal laws, well may be thought to be pernicious in relation to the health of the community. It is for the legislature to determine within reasonable limits in the exercise of the police power what the tests shall be for moral character sufficient to enable one to continue in the practice of medicine. The Statute in this particular is not open to objection. The circumstance that the petitioner already had been registered and given a certificate to practice medicine gave him no immunity against future legislation of the nature embodied in said chapter 218. He had no vested right to prey upon society by the exercise of deceit, mal-

practice or gross misconduct in the practice of his profession. His license to practice constituted no contract of that nature. *Burgess v. Major & Alderman of Brockton*, 235 Mass. 95, 100.

The statute affords every reasonable safeguard to protect the rights of the practitioner by requiring a hearing at which he may be present with witnesses and counsel, and providing also for hearing in court and revision and reversal of the finding of the board, if justice demands such action. *Stevens, Landower*, 228 Mass. 368.

There is nothing in the contention that the amendment to said chapter 218 by St. 1918, c. 257, s. 296, gives any protection to the petitioner.

The validity of the statute is within the authority of numerous decisions. *Hawker v. New York*, 170 U. S. 189. *Reetz v. Michigan*, 188 U. S. 505. *Collins v. Texas*, 223 U. S. 288. *McNaughton v. Johnson*, 222 U. S. 344. *Union Dry Goods Co. v. Georgia Public Service Corp.*, 248 U. S. 372. *Com. v. Beaulieu*, 213 Mass. 138. *Com. v. Zimmerman*, 221 Mass. 184. *Matter of Allin*, 224 Mass. 9. *Matter of Carver*, 224 Mass. 169. *Holcombe v. Creamer*, 231 Mass. 99. The conclusion here reached is in harmony with that of numerous other state courts upon a precisely similar point. *People v. McCoy*, 125 Ill. 289. *State v. State Board of Medical Examiners*, 34 Minn. 387. *Spurgeon v. Rhodes*, 167 Ind. 1. *Meffer v. Medical Board*, 66 Kan. 710; affirmed in 195 U. S. 625. *Aiton v. Board of Medical Examiners*, 13 Ariz. 354. *Freeman v. State Board of Medical Examiners*, 54 Okla. 531. *Traer v. State Board of Medical Examiners*, 106 Iowa, 559. *State Board of Health v. Roy*, 22 R. I. 538.

No discussion is needed to show that the specification charged in the notice is within the terms of the statute, and if found to be true would warrant if it would not require the revocation of the license to practice. The order dismissing the petition was right.

*Exceptions overruled.*

#### THE SOCIETY FOR CINEMATOGRAPHIC INSTRUCTION IN MEDICINE AND SURGERY.

The Society for Cinematographic Instruction in Medicine and Surgery has issued a circular letter setting forth its features as follows: This Society has devoted the past eighteen months to experimental work at hospitals and laboratories in order to definitely ascertain the applicability of the motion picture to the study of medicine, surgery and dentistry, and through

processes which have been evolved it is now possible to accurately and permanently record every detail of any minor or major operation, and to portray in a most vivid manner anything pertaining to the study of the above mentioned subjects.

This fact having been established, the field before the Society is unlimited. The science of cinematography has been recognized and endorsed by many leading members of the profession and must therefore be taken into account by every physician, surgeon and dentist.

The New York Academy of Medicine is one of many institutions that is utilizing this new method of the teaching of medicine and allied subjects by actual visualization. It is the aim of the Society to work out various courses of study by means of cinematography and to establish a cinematographic library in New York City.

The central library will be equipped for private or group study, while members or institutions at a distance may rent or purchase, at a nominal charge, duplicate copies of any of the subjects contained in the main library and thus witness the work of the ablest men in the profession. An exchange arrangement with the profession in European countries is being negotiated.

Any physician, surgeon or dentist in good standing is eligible for membership upon payment of five dollars per year. Seventy-five per cent. of the income of the Society is to be used for production and circulation of its cinematographic work.

Monthly meetings will be held at which the latest work in the regular courses will be shown. Research work will be pursued continuously. New modifications, new technique, and all new appliances and equipment will be made the basis of a "Current Events" picture which will be prepared and exhibited periodically.

The Society will also undertake to produce for any member a cinematographic presentation of any new idea or work of general interest to the profession, and in this manner a national forum will be created whereby a member will have the resources of the Society at his command to present his idea to the profession in the most rapid and economical manner possible.

The preliminary work has been carried on by a small group of professional men, but new members are now being admitted and the work is about to progress on a large scale. An advisory board is being formed, composed of honorary members of exceptional standing and ability in the profession.

Further information in regard to the work of the Society will be furnished to any physician, surgeon or dentist upon application to the President, Dr. James S. Edlin, 105 West 73d St., New York City.

## ANTI-VACCINATION AND THE OSTEOPATHIC SOCIETY.

THE annual campaign against vaccination has started. Medical Liberty League members and others opposed to vaccination were invited to attend a meeting under the auspices of the Massachusetts Osteopathic Society, held in the Osteopathic College September 26.

The pertinent question now is: "Does the Osteopathic Society array itself against vaccination? At one time there were indications of an earnest desire among osteopaths to study medicine as a scientific means of treating disease. It is hoped that anti-vaccination is not endorsed by the Society as a whole. If it is, it is only a step toward the degradation of a society, in the minds of the great mass of intelligent physicians and will tend to commit the Society to a spirit of antagonism toward medical progress. The influential osteopathic physicians will make a great tactical mistake if they allow the Society to commit itself in opposition to vaccination. Under the advertisement it was stated that Dr. F. P. Millard of Toronto, would speak. Dr. Millard's name does not appear among the physicians of Toronto as published by the 1921 Directory of the A. M. A.

## MEDICAL NOTES.

THE REGULAR MEETING of the Worcester District Medical Society will be held Wednesday, October 12, 1921, at 8.15 P.M., in the Assembly Room, Clark University. The Worcester North District Medical Society has accepted an invitation to unite with the Fellows of this District at this time. Communications: 1, Acute and Chronic Inflammation of the Middle Ear, Dr. George L. Tobey, Boston; 2, Duty of the Physician to Himself, to His Confrères and to the Public, Dr. Edward H. Trowbridge, Worcester. Dr. John W. Bartol, President of the Massachusetts Medical Society will be the guest of the Society. J. J. Goodwin, President; A. W. Atwood, Secretary.

THE officers of the New England Surgical Society elected at the annual meeting for the ensuing year are: Dr. Charles A. Porter of Boston, President; Dr. Herbert L. Smith of Nashua, N. H., Vice-President; Dr. Philemon E. Truesdale of Fall River, Secretary; Dr. Peer P. Johnson of Beverly, Treasurer. The following named surgeons were elected to membership which is limited to one hundred: Drs. Walter C. Seelye and William F. Lynch of Worcester; Horace Binney of Boston; George M. Smith of Waterbury, Conn.; Herman Pitts of Providence and Willis E. Hartshorn of New Haven.



THE daily papers have published statements purporting to set forth theories advanced by Dr. Samuel J. Harris who is now working in Washington. According to reports Dr. Harris contends that most eye troubles are due to mental strain, that is, are not organic and can be corrected by electro-therapeutic treatment.

Enquiries have been received from Washington regarding the methods advocated.

So far as can be ascertained these theories do not meet the views held by authorities here.

THE diphtheria problem must be made public until all phases are fully understood by the people. A very large proportion of deaths from this disease occur in children between the ages of six months and six years. It has been found that a large majority of infants are immune at birth but this immunity is lost in most individuals after six months. The time for the most effective use of toxin-antitoxin is at the time of losing immunity, that is prior to one year of age. Children should be protected exactly as they now are against smallpox, by vaccination. Diphtheria is most fatal in the early years of life, acts more quickly, may overwhelm the system before it is recognized and antitoxin used. Why not prevent it? Boards of Health and physicians, generally, should now inform the parents of every infant of their responsibility. Diphtheria can be as nearly eliminated as typhoid if we all do our utmost in a campaign of education.

**WEEK'S DEATH RATE IN BOSTON.**—During the week ending September 24, 1921, the number of deaths reported was 191 against 173 last year, with a death rate of 13.15. There were 26 deaths under one year of age against 42 last year.

The number of cases of principal reportable diseases were: Diphtheria, 36; scarlet fever, 18; measles, 10; whooping cough, 10; typhoid fever, 1; tuberculosis, 32.

Included in the above, were the following cases of non-residents: Diphtheria, 5; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 3; whooping cough, 1; tuberculosis, 20.

THE BERKSHIRE DISTRICT MEDICAL SOCIETY met September 29. Dr. Fred Lund read a paper on "The Diagnosis and Treatment of Acute Abdominal Condition." Dinner was served at 6.15.

THEODORE S. EVANS has been appointed interne in the House of Mercy Hospital, Pittsfield, and David P. Foster interne in the Massachusetts General Hospital.

THE SEVENTY-FIFTH ANNIVERSARY of Ether Day will occur at the Massachusetts General Hospital October 18 at three o'clock p. m., in

association with the centennial of the Hospital. Short addresses will be made by Dr. Henry P. Walcott, Major General Merritte W. Ireland, U. S. A., Dr. Frederick C. Shattuck, Dr. Harvey Cushing and Dr. C. Macfie Campbell.

### Miscellany.

#### INSTRUCTIVE DISTRICT NURSING ASSOCIATION.

JULY and August have been light months, with considerably less sickness; particularly in July there was a general decrease in all diseases, except those of digestion. These latter, which include the cases of summer diarrhea were about equal in number to those of the same period last year.

The big drop in all the communicable diseases of childhood, i. e. measles, chicken pox, etc., also in pneumonia and other respiratory diseases is to be expected at this time of year but the fact that there is a lessening in other diseases is in line with the improved health conditions so far characteristic of 1920.

Nine cases of typhoid fever and one of lethargic encephalitis have been nursed in their homes.

There were 44,631 visits made to 9,265 patients, of whom 1,033 were new-born babies and 4,403 new patients within these two months.

#### STUDY OF UNEMPLOYMENT.

A careful study was recently made of the effects of unemployment upon the health of families under the care of the nurses. The study covered 4,013 families, belonging to 17 different nationalities, each family with a membership of 5 plus. It was confined to the conditions observed during one day.

In 138 the worker was partially employed.

In 466 the worker was unemployed, the period of unemployment averaging 6 months.

In 76 the health of the entire family had been affected.

In 249 the health of one or more members.

One hundred and thirty-one of the families included one or more affected children. Among them such conditions as "children all undernourished;" "four or five not yet walking;" "four-year-old child scarcely able to walk."

One hundred and eight women, 32 of them pregnant, were found to be undernourished. Very few men showed ill effects.

In addition to undernourishment there were found active and arrested tuberculosis, rickets, overwork, undue mental strain, skin disease, cardiac patients lacking proper food and care, digestive disorders and lowered resistance to disease resulting in frequent minor illnesses.



## SOCIETY NOTICES.

**THE NORFOLK DISTRICT MEDICAL SOCIETY.**—A stated meeting of the Society will be held at the State School for Feeble-Minded at Wrentham, October 11, at 3.30 p.m., sharp.

The institution is about twenty miles from Forest Hills, on the right hand side of the state road to Providence, and the best automobile route is via Washington Street, through Rosindale, Dedham, Norwood, and Walpole. Six miles from Walpole, and one mile before reaching the town proper of Wrentham, a sign, reading State School, will be seen on the right side of the road; a guide will also be posted at this entrance to the grounds.

Fellows not having automobiles can be accommodated by being at Forest Hills Square before 2.30 p.m.

## PROGRAM

3.30 to 4.30 General Inspection.

4.30 to 5.00 Special cases will be shown.

5.00 to 6.15 Demonstration of school activities.

(Supt. George L. Wallace, M.D., will direct the exercises.)

6.15 Business.

6.30 Collation.

The Censors meet for the examination of candidates, Thursday, November 3, 1921.

BRADFORD KENT, M.D., *Secretary*,  
798 Blue Hill Avenue, Dorchester.

**BERKSHIRE, FRANKLIN, HAMPSHIRE and HAMPSHIRE DISTRICT SOCIETIES** are to hold a joint meeting for the study of impending legislation relating directly and indirectly to our profession. It is highly important for us to make our influence felt in shaping the legislation relative to health matters rather than later to endeavor to amend or annul such acts as are inimical to our interests.

For this meeting we are unusually fortunate in having such an interesting and authoritative group of speakers.

Dr. John Bartol, President of the Massachusetts Medical Society, will outline the legislative program of the Society for the ensuing year.

Dr. J. S. Stone, who for a number of years has faithfully served the Society at the State House, will tell us how we may most effectually organize our influence with the legislators.

Hon. Loring Young, Speaker of the House of Representatives at Boston, will tell us how legislation is shaped, amended, and passed. He will also tell us of the relation between a Representative and his constituents, and how they feel the pulse of the public.

Dr. Channing Frothingham, of the Peter Bent Brigham Hospital of Boston, a very interesting, forceful, and authoritative speaker, will tell us what he has learned regarding some of the "cults." At the last meeting of the State Society, Dr. Frothingham was appointed to investigate this subject and this will be a preliminary report.

Let us all become interested in the legislation affecting health matters and our profession, not "leave it for George." This meeting is regarded, by those in a position to know, as highly important to our profession. Let us all attend and find out what is going on.

This important joint meeting of the four western district societies will be held at the Kimball Hotel, Springfield, Mass., on Friday, October 7, 1921. Lunch will be served at 12.30, following which there will be an opportunity for us to become better acquainted. The meeting will be called to order promptly at 2 p.m.

It is absolutely essential for the committee of arrangements to know approximately how many will be present for the lunch, therefore you are earnestly urged to notify the Secretary if you intend to be present.

A. P. MERRILL, M.D.,  
Pittsfield, Mass.

## Correspondence.

## NOMINATION OF MEDICAL SOCIETY OFFICERS.

Somerville, September 23, 1921.

Mr. Editor:—

The Secretary of the Massachusetts Medical Society, in the "Answer to an Unthinking Fellow," stated that: "Ever since 1850 the councilors, censors and other officers of the General Society have been elected by the District Medical Societies in open meeting." Just think of it! Over 70 years without change!

The latter also states that: "The State Medical Society is not a labor union." That is a self-evident fact. I am credibly informed that practically all labor unions have provisions for the secret or Australian ballot in the election of all their officers, as well as modern methods of nomination.

Membership in the various districts ranges from 32 to over 700. In the Middlesex South District, containing in the neighborhood of 500 members, there is a nominating committee of 7 members, one from each of 7 sub-districts, each appointed by the president of the district for 7 years. These 7 men, each with a tenure of office of 7 years, when duly appointed and confirmed, make and bring in all nominations for elective officers. Can 7 men, so appointed by the presidents and acting as a nominating committee, adequately and wisely select?

As in the case of all well-oiled political machines, these nominations slip through. The general run of doctors are reluctant to make nominations from the floor, or to allow themselves to be so nominated. So, at times and even prevalently, we have presidents and other officers who are antagonistic and misrepresentative to the majority sentiments of the District.

The members lose interest. What's the use? Four or five years ago, under the leadership of Dr. Charles E. Mongan, an effort was made in Middlesex South District to provide for nomination by petition and election by the Australian ballot. In an exceptionally largely attended meeting, the measure had a good majority but failed to pass because three-fourths of the votes cast are required by the con-

stitution for the passage of any amendment to the by-laws. It looks as though the Massachusetts Medical Society was good for another seventy years under its present customs.

Nomination by petition, Australian ballot, initiative and referendum, or primaries in any form, have no part in the activities of the Massachusetts Medical Society.

FRANK E. BATEMAN,  
Physician in general practice.

# PLACE OF MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

Worcester, Mass., September 24, 1921.

Mr. Editor:—

Only very recently the city of Worcester has been the rendezvous of the members of the New England Surgical Society for their annual meeting. Any member of this society will admit that the hospitals here are as good as those found anywhere in the good U. S. A., and that this city has ample means of entertaining visitors.

I would, therefore, suggest—but only as a "private" in the Massachusetts Medical Society for the past 18 years—that the state society hold its next annual meeting in this city.

This city has already served as a convention locality for many large and influential organizations, and I believe that the grand city of Worcester is now entitled to have the Massachusetts Medical Society hold its coming yearly meeting within her gates.

After all, it behooves the state society to consider the will of the majority of its fellows, who, I am sure, will welcome the opportunity of visiting this beautiful city next June.

Then, again, in some future year, the society could meet in Springfield, thus giving way to the old and gray-worn precedent that all the annual meetings must necessarily be held in Boston.

Worcester has some fine hotels and her attractions are superb. Her educational institutions are both plentiful and renowned as well as her city and state hospitals. The city likewise contains several pharmaceutical houses, so that taken in all, Worcester is an ideal city for conventions.

I am certain that Dr. S. B. Woodward, former president of the Society and the present president of the Worcester Chamber of Commerce, will endorse this suggestion.

MAX BAPP, M.D., F.A.C.P.

[The Massachusetts Medical Society may properly feel that it should not inflict itself upon any community without an invitation which would warrant change in the usual custom.]

The question of meeting in places other than Boston has often been discussed and the advantages considered, but no definite invitation has been extended in recent years, so far as the JOURNAL has been informed.—Editor.]

## CANCER BY TALBOT.

227 Beacon Street, Boston,  
September 16, 1921.

Dr. John E. Talbot, Worcester, Mass.

Dear Dr. Talbot:—

Your article in yesterday's issue interested me very much. My mind has been traveling along somewhat the same trail. I am writing an article to be read at the coming meeting of the American College of Surgeons in October. A paragraph in my preliminary effort may interest you:

"Malignancy may be only an unbridled repair process and not the result of a stimulus emitted by bacteria, protozoa or other form of life. We have been looking for a positive cause. May it not be negative, as to the removal of an inhibition? The chick embryo which has grown steadily for nine years *in vitro* at the Rockefeller Institute, is suggestive. It appears

to have no limit while it is fed. It is bottled growth—bottled life.

"Suggestive, also, is the remarkable fact that new growths, both carcinoma and sarcoma, appear to have the faculty of calling on the organism for a supporting framework of connective tissue and blood vessels. Sometimes tumors exceed their rights and grow faster than the law allows them, so that parts perish from lack of nutrition. Others may practically perish from the reverse in calling forth a prison cell of reactionary fibrous tissue. Thus the malignancy of tissues is interwoven with their ability to use this magical property assigned to them of calling on the healthy body to feed and support them. The normal repair process following a fracture also has this magical attribute and calls on the fibroblasts and endothelium to proliferate. The chick embryo at the Rockefeller Institute shows the tenacity of growth inherent in the fibroblast, and it is not a great stretch of imagination that in the normal repair of a broken bone there are substances called forth into the circulation to ultimately check this insistent fibroplastic growth. In exuberant callus it almost fails to stop the process. In post-traumatic sarcoma the reins are lost and unbridled growth rages so long as the organism supplies it with nourishment.

"Like the fibrin and fibrinogen of the blood in need of the fibrin ferment to promote clotting, growth needs some chemical element to complete its usefulness. To bleed to death or to grow to death may be analogous processes."

You see I do not use your trophic nerve proposition but I recognize the logic of your deductions. The trophic nerves are very hypothetical compared to circulatory substances as controlling relations between tissues and organs. The internal secretions with their phenomena of acromegaly, cretinism, perveris and exophthalmics are good examples. If you were right, implants of tissue such as ovaries transplanted under the skin, would be disconnected from their trophic nerves and become cancer.

Yet there is something in what you say. I have at present a boy of 14 convalescent from an open reduction of a post-dislocation of the shoulder at birth. Within a few weeks after the humerus again rested on the glenoid, the atrophied arm and shoulder which were infantile, have shown a miraculous development. It seems as if an intelligence waited for the normal contact of the two bones to continue carrying out its contract with the spermatozoon, to produce the arm demanded in the specifications! Trophic Nerves? E. A. COOMAN, M.D.

[The JOURNAL is pleased to publish the foregoing letter sent to Dr. J. E. Talbot commenting on the article on Cancer recently published. Any contribution to this important subject, although only suggestive, is of value, for every idea brought forward by trained and thinking men should be given due weight by those who are studying this hitherto unsolved problem.—Editor.]

## ERRATUM.

In the article on "Nomographic Charts" by Drs. Boothby and Sandiford of the University of Minnesota, Rochester, Minn., which appeared in the JOURNAL of September 22, Chart 5 on page 348 should have appeared on page 347 with, and at the left of Chart 3, so that the basal metabolic rate could be determined in the manner described in the paragraph headed "Chart 5" on page 348.

## NOTICE.

The program of the Tuberculosis Institute which is to be held at the Massachusetts General Hospital, October 26 and 27, will be published October 13 and 20. Every physician whose work brings him in contact with tuberculosis and incident problems should make arrangements to attend.